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# AMERICAN BEE JOURNAL

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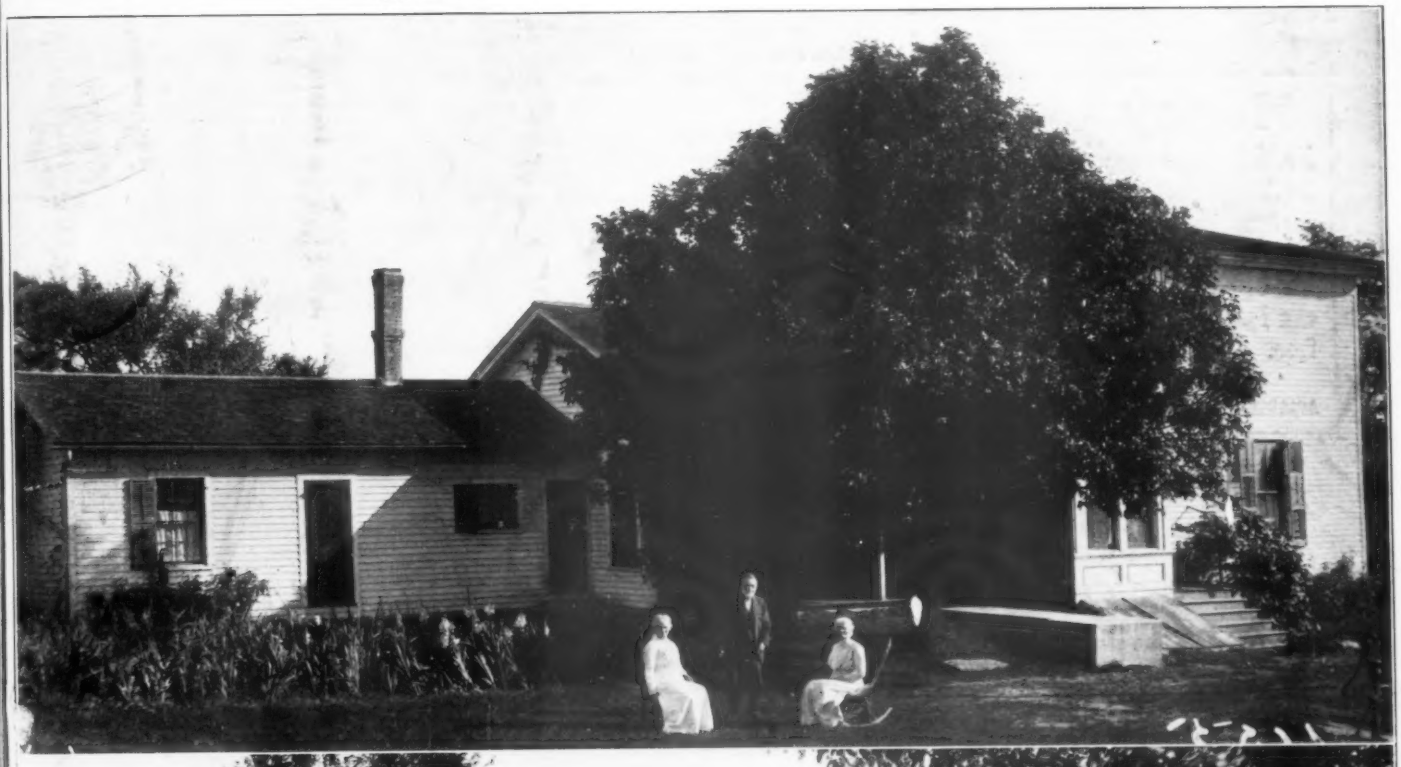
JANUARY, 1916



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|---|---|
| 1-frame nuclei without queen | $1.50 |
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When queens are wanted with nuclei add queens at above prices quoted for queens

| | |
|---|---|
| ½ lb. package, wire cages, without queens | $1.00 |
| 1 " " " " " " | 1.50 |
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If queens are wanted with pound packages add at prices quoted for queens.

On all orders amounting to $50 and over we will allow 5 percent discount, and orders amounting to $100 and over will allow 10 percent discount from above prices.

We guarantee safe delivery on queens, and safe delivery on bees that are not in transit over five days.

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We offer our 4 cylinder, 35 horse power, covered top delivery automobile, in perfect order. Cost $1500; will sell for $750. Capacity 1500 pounds. Just the thing for a farmer, dairyman, or grocery delivery. If interested, write for more particulars, as the party buying will get a bargain.

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American Bee Journal


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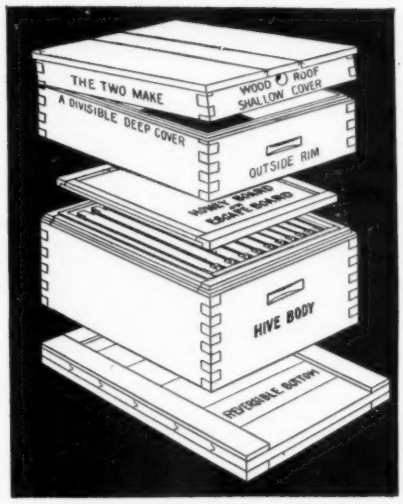
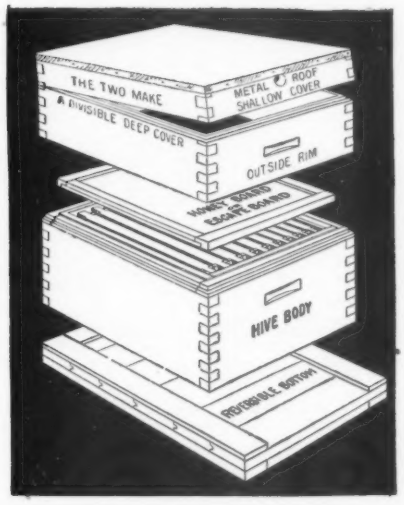
Air spaces or packing as you prefer. Seven-eighths material in the outer wall, which means that they will last a life time. Used and endorsed as the best hive on the market by many prominent beekeepers of this and other countries.




1 Story Protection Hive with divisible deep wood roof cover, consisting of shallow cover and rim.

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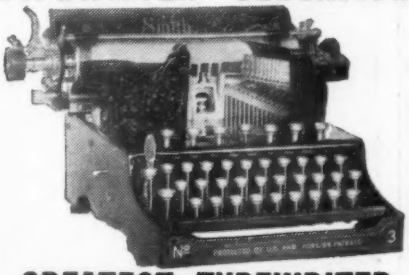

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**VISIBLE WRITING MODEL No. 3**

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Ship me your Model No. 3, F.O.B. Chicago, as described in this advertisement. I will pay you the $24.00 balance of the SPECIAL $29.60 purchase price at the rate of $2.00 a month. The title to remain in you until fully paid for. It is understood that I have five days in which to examine and try the typewriter. If I choose not to keep it I will carefully repack it and return it to the express agent. It is understood that you give the standard guarantee for one year.

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American Bee Journal

Grand Prize was awarded Root Supplies at San Diego.

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May your success in 1916 exceed your happiest expectations. It will go far toward doing so if your equipment and supplies are made right. And there is just one way to KNOW the best bee supplies—that's by getting

# OUR 1916 CATALOG

Ready for delivery January 1. Drop a card for it.

The new catalog is a complete revision. It represents real progress in the manufacture of supplies -- progress tempered by the results of careful and patient tests.

The new catalog describes the new friction-drive extractors. The drive is noiseless and flexible. Power is applied so gradually that there is no strain on the comb.

Prices in the new catalog are essentially the same. Wax foundation is two cents lower. The heavy European demand for zinc for military purposes has had an effect on prices of queen excluders.

The new catalog forecasts Gleanings in Bee Culture for 1916. Features of the magazine will be practical special numbers on building, out-apiaries, wax production, advertising honey, and marketing honey.

The new catalog explains our connection with Airline Honey and shows how it benefits you. The information is interesting.

Write for the free catalog now. Remember the 3 per cent discount on January purchases.

New York
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## THE A. I. ROOT CO.

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**43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only**

| | Nov 1 to May 1 | | | May 1 to June 1 | | | June 1 to July 1 | | | July 1 to Nov. 1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 6 | 12 | 1 | 6 | 12 | 1 | 6 | 12 | 1 | 6 | 12 |
| Untested..... | $1.50 | $7.50 | $13.50 | $1.25 | $ 6.50 | $11 50 | $1.00 | $ 5.00 | $ 9.00 | $ .75 | $ 4.00 | $ .75 |
| Select Untested | 2.00 | 8.50 | 15.00 | 1.50 | 7.50 | 13 50 | 1.25 | 6.50 | 12.00 | 1.00 | 5.00 | 9.00 |
| Tested..... | 2.50 | 13.50 | 25.00 | 2.00 | 10.50 | 18.50 | 1.75 | 9.00 | 17.00 | 1.50 | 8.00 | 15.00 |
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Bees by the pound, 1 lb., $1.25; 2 lb., $2.25; 3 lb., $2.75.
Nuclei (no queen) 1 fr. $1.50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3.50; pure 3-band Italians.
Select queen wanted, add price.

**Capacity of yard, 5000 queens a year—Select queen tested for breeding, $5.00**
**The very best queen tested for breeding, $10**

Queens for export will be carefully packed in long distance cages, but safe delivery not guaranteed

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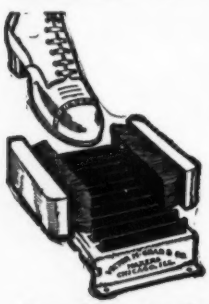

## Give Your Wife a Surprise

When a fellow comes in from the barn on one of those wet days when most of the farm sticks to his shoes, it is almost impossible to get them clean with an ordinary scraper. Surprise your wife by placing an **Automatic Foot Scraper** at the back door. Mud, snow, dust and dirt will not be tracked over your floors if you use

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outside your door. The only device made which cleans bottoms and sides of shoe in one operation. Has ten parallel plates for scraping soles and two stiff bristle brushes which cleans sides of shoe.

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**AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS**

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Write to Mr. A. L. Rice, Manufacturer, 23 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information, showing you how you can save a good many dollars. Write today.

**"A Year's Work in an Out-Apiary"** is the name of a booklet by G. M. Doolittle, the well-known honey-producer of New York State. He tells how he secured an average of 114½ pounds of honey per colony in a poor season. It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey-producer. The price of the booklet is 50 cents, postpaid, but we club it with the American Bee Journal for a year—both for $1.30. Every bee-keeper should have a copy of this booklet, and study it thoroughly. Address all orders to the American Bee Journal

American Bee Journal


# THE IDEAL BEE VEIL

Oftentimes when out in the yard working with the bees one stoops over to pick out a frame, and as usual bees keep buzzing around one's head, watching for a chance to sting. The IDEAL BEE VEIL is constructed of cloth of wire, there being a cord at the top of the veil used to pull the cloth around the crown of the hat. The lower part also has a cord which fastens around the waist. The wire on the IDEAL does not strike the face and prevents the bees from stinging. It can be readily seen that a veil of this kind has the cloth veil far out distanced for comfort and utility. Sparks from the smoker does not burn holes in the IDEALS as the netting veil. The veil is manufactured by us and is recognized by the best and largest beekeepers as the most practical veil on the market.

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***Where the good bee-hives come from***

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**And this is, therefore, the best time for you to take up an inventory and send in your orders for supplies**

Not only will you thus receive your hives, frames, supers, etc., in ample time to nail them up and prepare them for the spring, but you will also save 3 percent on the cost of these.

Early-order discounts for January, 3 percent; for February, 2 percent, and for March, 1 percent. It pays you to order now.

***ROOT'S GOODS, WEBER SERVICE—The ideal combination***

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**Special Prices on Galv. Barbed Wire.**

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free.

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Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it." Catalog & price-list free

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In its current and coming numbers will discuss the following policies which constitute its platform of principles.

First—Uniform quality of product, honestly graded and attractively displayed.

Second—A system of distribution that will protect the local producer, and prevent flooding one district and leaving others bare.

Third—A system of crop reports that will give accurate, detailed, and trustworthy information as to crop conditions in all sections promptly and intelligently.

Fourth—An efficient method of presenting facts and reasons for the wider use of honey in cooking, in the arts, manufactures, and on the table, to the people who who would use it if they knew.

Fifth—An association of beekeepers who will carry these things forward to a successful consummation.

Are you interested in these policies? Wrap a quarter in paper and send it AT OUR RISK, and get these valuable numbers, and the rest of the good things for the coming year.

**Address, THE BOOSTER, Redkey, Indiana**

Many have stated that the 1915 Lewis Catalog was by far the best bee supply catalog ever issued.

The New Lewis 1916 Catalog is still better than the 1915 edition, particularly in the illustrations, most of which will be found to be entirely new and of the finest work the engraver is able to produce in this line. As in previous editions, all descriptions and lists of prices are comprehensive and very plain.

This new Lewis 1916 Catalog is now out. If you have not been receiving the Lewis Catalog annually, send in your name at once and we will see that you get your copy promptly.

**G. B. Lewis Company**

***Manufacturers of Lewis Beeware***

**Watertown, - Wisconsin**

# AMERICAN BEE JOURNAL

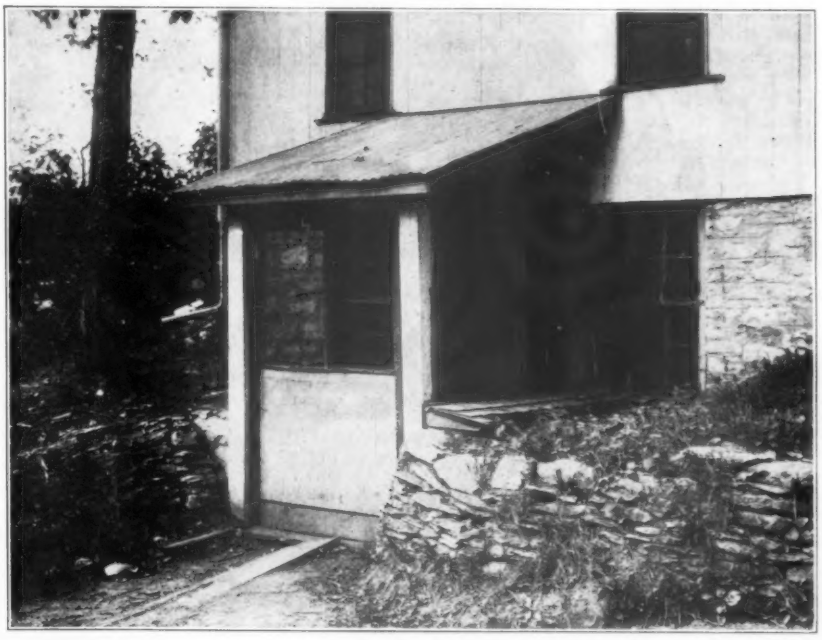
Vol. LVI.—No. 1. HAMILTON, ILL., JANUARY, 1916 MONTHLY, $1.00 A YEAR


# A System of Extracted Honey Production

## Economy of Time and Labor an Important Consideration

IN order to realize the most profit from honey-production, it is important that the beekeeper eliminate unnecessary labor, for labor is the most expensive thing which he has to buy. If a man does all his own work it is equally important. Two things must be considered in establishing outyards, the honey-producing flora within reach and the time necessary to go from one yard to another. There may be other considerations, but these two will apply in every locality. After the general location has been selected there will be still a number of minor considerations such as convenience, ease of approach, protection from wind, etc.

When a man puts all his eggs in one basket, he should be very careful of the basket. Accordingly when a man decides to take up beekeeping as a business, he should use his best judgment in every detail. Too much care cannot be used in selecting the locations for the apiaries, for a very few miles may make a great difference in the honey-production which will be possible with a given number of bees. There are seven apiaries in the Dadant series, and only two of these can be depended upon for a frequent fall flow. During the past season all seven yards stored heavily from heartsease and other fall flowers, but it often happens that the only fall flow is from the two apiaries within reach of the Mississippi river bottoms.



A SCREENED ENTRYWAY PREVENTS THE BEES FROM GETTING INTO THE EXTRACTING HOUSE

The first outyards were established in 1872, and several have been maintained ever since that time. While the locality would support a large number of colonies in one yard during a good flow, the available fruit bloom is not sufficient for spring brood rearing. The flora that determines the number of colonies which may be profitably kept in one yard is not that which produces the main flow, but the intermediate bloom which keeps the bees occupied during the rest of the season. In most of the northern States, east of the Mississippi river, fruit bloom and dandelion blossoms are depended upon to furnish the nectar and pollen for spring brood rearing. The clovers, especially white clover, are the source of the main honey flow. In many localities there is a second flow from fall flowers. If the beekeeper is within reach of sufficient honey-producing plants to furnish necessary food supply during the interim between the clover flow and the fall flow, and also for spring brood rearing, there is little danger of overstocking his locality. In the vicinity of Hamilton these minor crops do not seem sufficient for more than about 100 colonies. When the number has reached as many as 120 in one yard there has been a decided reduction in the yield.

The automobile is the latest addition to increase the productive capacity of the beekeeper. Movable combs, comb foundation, the extractor, and now the automobile have raised honey-production from a mere fad to the dignity of a business worthy the attention of a man of high attainments. It is now easily possible to reach an apiary 10 or 15 miles away, do a good day's work and get home in time for supper.

It is important that apiaries be established where they can be left for a long time as it is desirable to have a honey-house and other conveniences that are not easily moved at each yard. Most of our apiaries have been established for many years, and since the owner of the land receives an agreed share of the crop, he is usually well satisfied with the arrangement. There is more interest on the part of the land owner where his rental depends upon the size of the crop, than where he receives a certain stipulated price regardless of

American Bee Journal

A PART OF THE DADANT HOME APIARY

the success or failure of the venture.

During a heavy honey flow the bee-keeper with five or six hundred colonies of bees will find it necessary to step lively with even the best possible arrangement. Not long since a publisher remarked to the writer, that he had thought his offices very crowded and felt the need of additional room, until an expert rearranged his plant, after which there was room to spare. The same principle will apply to bee-keeping. The man who uses a good system of arrangement from start to finish will easily find it possible to care for a much larger number of colonies than would be possible with a careless arrangement. The position of the honey-house in relation to the apiary, the position of the extractor in the honey-house, the readiness with which tools and equipment can be reached when needed and similar small matters will make a great difference in the amount of work which can be done in a day. The elimination of a few unnecessary steps each day will make it possible for a man to care for another colony or two and add something to the sum total of the season's production.

At each of the Dadant apiaries there is a tight building where supers and other necessary equipment are stored and where the extracting is done. An extractor is kept at each of the yards and the honey placed in barrels as fast as extracted.

Capping cans are used to receive the cappings. They are light and easy to move about, yet large enough to hold the cappings for an entire day's work. Since all wax is rendered at home the cappings are taken home at the close of each day. A number of cans are in use so that they may be left in the can long enough to drain thoroughly. Escapes are used altogether in removing honey, which greatly lessens the annoyance from bees. Even when escapes are used, if the honey is removed after the close of the flow, the bees will soon be trying every possible opening to find a way into the building and a screened entryway like that shown on first page will be found very effective

AT THE SACK APIARY A FALL FLOW SELDOM FAILS

THE HOLLAND OUTYARD

in keeping them out. They go to that part of the screen nearest the honey-room, instead of trying to get in at the first door, while the men are bringin in the filled supers, the few who find their way through the first door rarely go through the second door.

After the last extracting, some bee-keepers pile up the empty extracting combs in the open air and permit the bees to clean them out. This is not good practice for several reasons; it encourages robbing at a bad season of the year and the bees damage the combs. We consider it much better to place the supers back on the hives in about the same proportion in which they were removed. If several are placed on one hive the bees will not go down again to cluster as readily as when only one or two are present. The supers are usually removed on a frosty morning when the bees are clustered below. It is annoying to find a lot of bees still in the upper super, as may occur when the supers are placed

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on the hives in big piles.

Our large hive has a brood-nest of sufficient size to furnish room for a very prolific queen to lay without crowding. The need of excluders is thus largely avoided. During the past season excluders were used on part of the hives at one yard because a few queens insisted on going into the supers to lay. Fourteen of the sixteen swarms which issued at this yard came from the colonies on which excluders were used. The use of excluders hinders the free movement of the bees between the brood-nest and the storage space above. This free movement is important if swarming is to be kept within bounds, as the above experience shows. With our large hives there is little trouble from the queen laying in the super if care is taken that no drone-comb be present immediately over the brood-nest. Our frame is about two inches deeper than the Langstroth frame, which adds greatly to the capacity of the brood-chamber.

THE MILLIKEN YARD—CLOVER IS THE PRINCIPAL DEPENDENCE HERE

THE POLAND OUTYARD

The accumulation of wax is no mean item in a large apiary. The cappings, of course, are the principal source of this product, but the small scrapings that are often thrown away amount to more than one would think. If a convenient container is kept constantly at hand in which to throw these bits of wax the beekeeper will find it worth while. Bur combs, propolis, scrapings and other odds and ends add to the total accumulation. In going over our apiaries of nearly 600 colonies the total was carefully weighed to determine the amount, and to our surprise more than 30 pounds of wax was secured from these remnants.

In rendering the wax it is important that the work be done very thoroughly. Few beekeepers are equipped to get all the wax, as has been proven many times by extracting considerable quantities from the slumgum which was supposedly clear. A second or third pressing nearly always pays, and even then it often happens that much wax will remain with the refuse unless good equipment is used.

The beekeeper who has never practiced the establishment of outapiaries, has little idea of the possible difference in yield between two yards only a few miles apart. These differences may be due to several causes. Woodland flora is quite different from that of prairie land, and although many apiarists hold that bees travel as far as eight miles in any direction, we have never had them go beyond three miles, and this only in such a direction as offered the greatest ease to their flight. Hills covered with timber offer more or less obstacle to their flight, and we feel quite positive that the longest flight of the bees is on an easy grade, up or down avalley. Winds, of course, probably also have an influence, as the breezes bring to the flying insects the smell of the blooming fields and also help them to get home after they are loaded.

We have often had apiaries as close together as four miles. As the vicinity of the Mississippi river is usually broken and more or less covered with timber, the apiaries within two miles of the stream have a variety of flowers. But those located farther have, on the other hand, a profusion of large pas-

THE LE MAIRE OUTYARD

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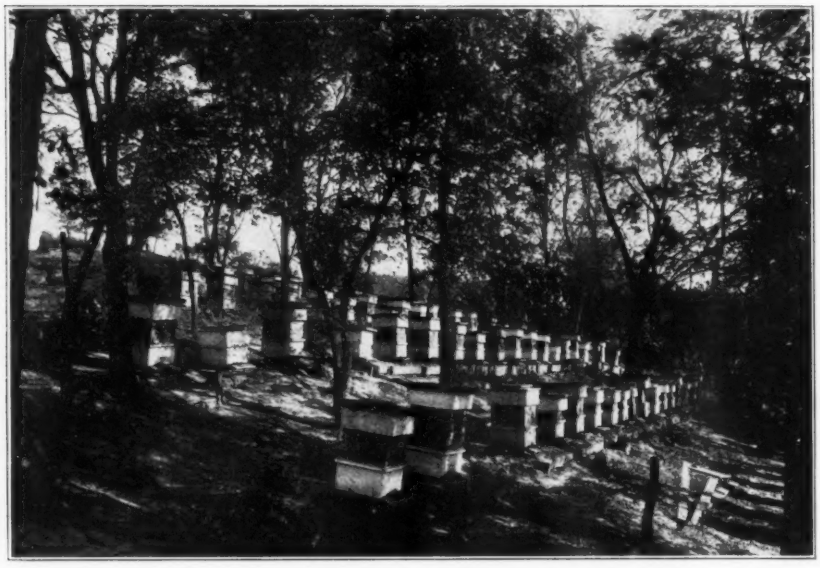

THE KOCH YARD—ONE OF THE TWO YARDS WHERE THE FALL FLOW IS DEPENDABLE

LOADING HONEY AT AN OUTYARD

tures which may produce unmixed white clover in the spring and very ample persicaria bloom in August. The lowlands in the last days of summer are covered with Spanish-needles, also called bur marigold.

Some localities have so ample a production of honey-plants that several hundred colonies thrive in the same apiary. We know of two or three localities in Iowa where over 500 colonies are kept within a radius of three or four miles. These are privileged locations. The beekeeper must be the judge of the capacity of his district and act accordingly. It would be folly to establish outapiaries as long as our home location can suffice.

# Dr. C. C. Miller's Personal Recollections

## Life Story of America's Best Known Beekeeper

These notes are written at the request of C. P. Dadant. A carbon copy is also taken for my family; which accounts for their containing items of no interest to the beekeeping public. No care is taken as to literary character; merely the facts.

I was born June 10, 1831, at Ligonier, Westmoreland Co., Pa., about 50 miles east of Pittsburg. My father married my mother, Phebe Roadman, when she was 16, and I think it was something of a runaway match. Father was a physician, Dr. Johnson Miller, born in 1798. My mother was born 10 years later in Westmoreland Co., Pa. Her father and mother came from Germany. I think my father was born in New Jersey. Grandfather Miller, whose name was Charles, brought his family from New Jersey while the children were young. He was a tailor, and set his four sons at the same trade. It stuck with his sons Jacob, Coursen, and Charles, but my father ran too much to books, and became a doctor. The family had been Americans for generations, and I don't know their original nationality, although I think largely English.

When I was 10 years old, my father died after a short illness with pneumonia, leaving his dying injunction with mother that myself as well as my older sister, Lizzie, and my two younger sisters, Harriet and Henrietta, should have a good education. This injunction my mother carried out to the best of her ability. She spared no self-denial that we might have the best chance for an education. At the time of his death my father was silent partner in the firm of Hargnett & Miller, which ran a general village store. When the affairs of the firm were closed up quite a while after father's death, there was little or nothing left for the heirs; just why I don't know.

DR. MILLER IN BOYHOOD.

My boyhood was a care-free, happy one. I went to school because I had to, but I had no consuming thirst for what I might acquire there. The taste for study was a matter of later growth. At first there was no public school; ours was a "subscription" school. But we had cousins some miles away who were attending a public school—"free school" it was called—and we children thought it must be a good thing, for what else could a "free school" be but one in which the scholars were free to whisper all they liked?

Even when the school became a public school, there was no change in the character of the school, and schools were not then what they are now. Spelling was well taught, better than now, and I have always been proud of being a good speller; but the same could not be said of any other study, although writing was a near second. We had no printed copies, and no steel pens. The "master" or the "mistress," as the case might be, "set" the copies and made or mended the pens, which were of goose-quills. There was no class in arithmetic. Each one did his "sums" independently at his seat, with perhaps an occasional scrutiny on the part of the teacher, and when he met

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an example too hard for him he took it to the master's desk to be shown.

No tasks were assigned to be taken home; when school "let out" in the afternoon there was no need to give thought to lessons until school "took up" next day. But there were six days of it each week; Saturday was the same as any other day. Neither was the monotony entirely unbroken on the Sabbath. In Sunday-school there were classes in their a, b, c's and a, b, abs the same as on week-days.

Though crude in some respects, yet in one respect the Sunday-school of that day was ahead of today. We committed Scripture to memory as we do not now; stimulated thereto by the hope of acquiring for a certain number of verses a bit of blue or red pasteboard with a verse of Scripture printed on it. One week I achieved 100 verses which I recited at Sunday-school.

When perhaps 12 years old, I spent two years at Laughlinstown, clerking in the country store of John G. Armor. For the first year I got $24, and $50 for the second year. I had my board additional, and my mother did my washing. Saturday evening I walked home three miles to Ligonier, and back again—I'm not sure whether Sunday evening or Monday morning.

Then I went back home, and to school. Later on I entered the office of Dr. Cummins to begin the study of medicine. The Latin terms were hard for me, and I thought I needed a term at the academy to help me out. Said academy was a private school with one teacher. The doctor urged that if I gave up because the reading was too hard, I would never develop a strong character. But I persisted and went. When I had finished one term I thought I needed about two more to make a finished scholar of me. By the time I finished the third term I had decided I would not stop until I was a college graduate.

I first entered Jefferson college at Cannonsburg, Pa. I took matters seriously, and devoted my time to study literally. That was before the days of athletics in colleges, and there was no requirement that students should take any form of exercise. Strange as it may seem, I actually didn't know that it was at all important to exercise. I had never before exercised, that I know of, although I had spent plenty of time in play. At college the only kind of play I indulged in was playing cards, which doesn't afford a great amount of physical exercise. The body of students as a whole was card-crazy. Quite commonly it was gambling, although the stakes were small. But I drew the line at playing for stakes, however small. I became quite expert, and then became tired of the game and quit.

I had no regular hours for study, but put in pretty much all my time in study. At night I studied until I became so sleepy I couldn't continue longer; then lay down and went to sleep. When I woke up I at once went to studying again, whether I had slept all night or only two hours. In the latter case of course I didn't study very long before I had to give up again with sleepiness. So it might happen that the night might be divided up into two or three sessions of study, but not generally. It might be thought that it would be

DR. MILLER WHEN A YOUNG MAN

troublesome undressing and dressing so often. I didn't undress at all. At the time I clerked in the store at Laughlinstown, I had a fine, big bed furnished me, with plenty of bedclothes. It was spread out on the counter, and in the morning rolled up and strapped together with a heavy strap, and then I lugged it upstairs, a barn-like place filled with bins of country produce. The stairs were winding, and none too wide, and the task of getting it up was almost beyond my strength. So, without saying anything to make trouble for any one else, I brought down merely the bedclothes each night, and with them I slept on the counter. It was at first a pretty hard bed, but I soon got used to it, and to this day no bed is too hard for me. With boy-like foolishness I went still further, gave up undressing, and used no pillow except my right arm. After I left Laughlinstown, I took to sleeping on two chairs—sometimes on three by way of luxury. This in winter. In summer I slept on the porch or anywhere that came handy. No bench was too narrow to serve; I never turned over in my sleep.

To return to Cannonsburg. In addition to bad habits regarding exercise and study, I boarded myself and had poor food. Before the year was out I had to go home. I made the journey home on foot, on one of the days covering 40 miles.

Although still in my teens, I taught a term in the public school of Shellsburg, and also in Johnstown, Pa., the place which years afterward suffered from such a terrible flood. Johnstown was then a much smaller place than now, and the school I had was made up of boys only, the larger boys of the place, and a pretty tough lot.

Instead of returning to Jefferson college, I entered Union college, Schenectady, N. Y., influenced thereto by A. P. Botsford, a graduate of Union who had married my oldest sister. The two years, junior and senior, that I spent there, were two strenuous years. It was all work and no play, for I had not yet learned the lesson that "All work and no play makes Jack a dull boy." In those days there were no college teams and no college games, and nothing to induce physical exercise. One of the leading interests of the students was their society membership. I was a member of one of the literary societies. Instead of being a member of one of the Greek letter secret societies, I belonged to the only anti-secret society.

[To be continued.]

## Marking Section Honey

BY R. A. BURNETT.

WE find great dissatisfaction on the part of the retailers where sections are marked "Not less than 10 ounces to 16 ounces," packed in the same case, *i. e.*, those that weigh 10, 11, 12, 13, 14, 15 and 16 ounces, should be packed by themselves, and not mixed in the same package or case.

Then, again, where sections are stamped "Not less than 10 ounces," while some of them run 16 ounces or more, the retailer finds great difficulty in selling them at their actual weight, as the purchaser says: This is marked 10 ounces, and you say it weighs 14 ounces. Now what am I to believe? Evidently it is going to resolve itself into each section being weighed separately and marked, Actual weight.

The question has been raised as to whether or not it is necessary to have the weight on a section of honey that is not in a carton?

There has been much said in Gleanings in Bee Culture on this weighing of sections, but this particular phase of it has not been mentioned so far as my observation has gone.

It is really a very important point.

While it is not necessary to have the weights marked on sections produced in the State of Illinois unless they are sold to go beyond the confines thereof, when sent to a large market like Chicago they are liable to go anywhere in the United States, thereby requiring compliance with the Federal Law.

Light weight sections and heavy weight sections packed by themselves sell to better advantage; thus it is a matter of self-interest for the owner to comply with this requirement. Many reason that some people want heavy sections and some want light sections, and that where a retailer only buys one case of honey it is necessary to have different weights in the case. That may be true in little towns, but it is not so in the city. Time here is calculated at so much an hour, and if the clerk is detained in selling a section of honey because of mismarking of weight, or the mark of a minimum, whereas it weighs much more, it militates against honey being sold or pushed for sale by the retailer.

Chicago, Ill., Nov. 22.

[Iowa and some other States have copied the Federal Law. To comply with the law in these States every section must be marked with the net weight, even though it is not shipped out of the community where it is produced. The actual weight should not vary more than an ounce or so above the weight marked on the section.—EDITOR.]

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# THE EDITOR'S VIEWPOINT

## Our Cover Pictures

The cover pictures this month show Dr. C. C. Miller and his family at home at Marengo, Ill. The first installment of Dr. Miller's life story will be found in this number. Note especially the row of basswood trees planted by Dr. Miller many years ago. They are the only linn trees in the vicinity of Marengo.

## Food Value of Honey

The article on Food Value of Honey in the December number met with so much favor that we have arranged to issue a 16-page booklet containing this and similar matter. As soon as they are ready we will send samples to all who ask for them. The article is so popular that we have decided to issue 100,000 of these booklets which will enable us to sell them to beekeepers at a very low price. We hope to be able to make the price as low as $1.00 per hundred, postage extra. At this low price we feel very sure the beekeepers will find it profitable to distribute them in large numbers.

## Productive Beekeeping—Another New Book

"Productive Beekeeping," by Frank C. Pellett. (Lippincott's Farm Manuals, $1.50.)

It is hardly necessary to introduce this author to our readers. Mr. Pellett is known as a naturalist, lecturer and beekeeper who came into the lime light only a few years ago, in Iowa, and has "made good." Valuable articles from his pen have been published by some of the leading agricultural magazines, and our readers know him most especially through the course of honey-plant descriptions contained in the American Bee Journal for the year past and still continuing. Mr. Pellett has been president of the Iowa State Beekeepers' Association and is still State Inspector.

Although the title of the book is very similar to that of Dr. Phillips' work, "Beekeeping," the contents are quite different. The study of bees and honey production covers so fertile a field that it is almost inexhaustible. Of course, in its main lines, each bee-book contains similar statements. But for an instance of the possibility of variation, although one or two bee-books mention laws on beekeeping, none other gives suggestions of the requirements of a good bee inspector and the necessity of securing a man who is already a good beekeeper and can impart what he knows to uninformed people. He impresses upon us the absolute necessity, if we are to get rid of bee-diseases, of informing every man who keeps bees, concerning the need of being able to treat disease himself. He insists that "we must make every man who keeps bees an up-to-date beeman." In view of the seriousness of the question, this ideal condition should be strived for, even if we never entirely reach it.

His advice is sound. He does not launch into new, untried matters. For instance, after considering the races of bees and describing the leading kinds, he writes: "It is a pretty safe rule in the average American locality to depend upon the Italian, unless some other race has been successfully tried in the neighborhood. It is only fair to say, however, that no other race has been tried under such widely different conditions as has the Italian. It is possible that with an equal opportunity to demonstrate their good qualities, either the Caucasian or the Carniolan race may rival them for popular favor."

Pellett does not make any attempt at giving his reader elaborate anatomical descriptions of the honeybee. He treats rather of the "business of beekeeping and at once goes into the requirements of successful management on a large scale. Both comb and extracted honey production are considered, with the best and latest methods. In fact, he gives, in 320 pages, as much condensed information as may well be crowded in such a space. The book is well gotten up and the numerous cuts clear. The cut of worker-bees surrounding the queen is the best one we have seen.

The book can be had from this office on receipt of price, or with the American Bee Journal one year, both for $2.00.

## Egg Development

"The Embryology of the Honeybee" is the title of a new work, of about 300 pages, by James Allen Nelson, Ph. D., expert in bee-culture investigations at the Bureau of Entomology of Washington, D. C. The book has an introduction by our well-known friend, E. F. Phillips, and is published by the Princeton University Press.

A work of this kind is out of the range of the education of the average apiarist. So it is likely that only a few of our subscribers, were they to read this book, could grasp its full value and understand its descriptions. But even the uninitiated in the study of embryology can appreciate the amount of work involved in such a treatise.

That Nature follows similar methods in the development of all living beings may be readily seen when comparing this description of the transformations of the eggs of bees with the descriptions given by Haeckel and others of the transformations of all life, from the lowest grades to the highest, from fishes to man, by the development of the single original cell into compound cells and "cleavage," until the most elementary forms have gradually changed into more or less intricate bodies. It is "variety in uniformity." We see how, by steady modifications, the outer layer of cells changes to exterior organs, while the inner layers of similar cells form the digestive and other inner organs.

The text of this work is accompanied by nearly 100 cuts and six plates. The latter were to us the most interesting part of the work, because they show, on a much enlarged scale (4¼ inches), the outer appearance of the gradually changing egg, from the moment it is laid in the cell until it hatches into a grub or larva.

We knew already that the big end of the egg becomes the head of the larva when it hatches, that the egg is not straight, but slighly curved, that it is laid in the cell with the small end

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down when it is not lying on its side, that it is fastened to the cell base by an adhesive secretion which accompanies it, that there is at the big end a very minute opening, a micropyle or micropylar area through which the egg is fertilized when it is to become a female, worker or queen. But we did not know that the convex side is to be the ventral part of the larva, the concave side being its dorsal surface. We learnt also that it takes a trifle over the three days usually counted to hatch the egg normally, approximately 76 hours.

The book shows deep study and profound scientific research, 86 authorities being quoted. We have no doubt that it will be read with great interest by embryologists everywhere.

## Parthenogenesis

In the review of Dr. Phillips' book, "Beekeeping," I mentioned one point which I desired to criticise. It is perhaps a little presumptuous on the part of one who has never made microscopy a study, and whose notions of bee anatomy are entirely based upon the observations of others, to put forward a criticism of so able a student as our friend, but he knows that this discussion is prompted by a desire to obtain more light.

Dzierzon's view of parthenogenesis indicates that "all the eggs in the ovary are eggs which would normally develop into males, and if fertilization occurs the sex is changed to female." This view, clearly stated by Dr. Phillips, exactly describes the part of the Dzierzon theory with which he disagrees. His reason for doing so is that he has "found that many eggs laid by drone-laying queens fail to hatch and, in fact, are often removed in a short time by the workers." His theory is that some of the eggs are primarily destined to be males and others to be females, and that this ruling would agree with the general rule of nature. Then, to use his own words, "It is not improbable that the eggs (of an unimpregnated queen) destined to be female die for want of fertilization, while the eggs destined to be males, not requiring fertilization, are capable of development."

In my queen-rearing experience, it happened to us once, I believe it was in 1872 or 1873, that we found sale for seven first-class Italian queens, very late in October. The amount offered for those queens, by a lover of good stock, was so enticing, that we decided, my father and myself, to sell the queens, which were in very populous colonies, and take the risks of being able to replace them the same season. Queens were not then to be bought as readily as they are now. There were still many drones, as the season had been very prosperous and late. But those queens, hatched early in November, had no opportunity to mate, for the weather turned cold suddenly and the time of their rut passed without any opportunity for flight, even though drones might have been present. The following spring we found ourselves with seven very pretty and very prolific drone-layers. Their eggs were laid as regularly as those of fertilized queens, and their progeny hatched in the most uniform way, small drones from worker-cells and large, full-sized drones, from drone-cells. I do not remember that any of their eggs failed to hatch. True, some of them might have been removed by the bees, unknown to us, but this does not seem likely. The little drones appeared as able bodied as the large ones, and according to the Dzierzon tests must have been proportionally as good as the large ones. It goes without saying that we promptly replaced the queens with other breeding stock, and never did we have better early matings than that year, since thousands of drones were produced at a time when there are usually very few.

In addition to this experience, which leads me to believe that, in Dr. Phillips' cases, the non-hatching eggs which he noticed must have been due to other causes than want of fertilization, I feel somewhat skeptical over the possibility of two kinds of eggs in the ovaries. A good queen lays eggs that hatch as drones in every large cell she meets. She likewise lays worker eggs in every worker-cell. At times she avoids drone-cells. At other times she seeks them. We can readily understand that she may, at will or by certain natural motions, leave an egg unfertilized or cause the spermatheca to do its work. But how would she know, before the egg leaves its particular branch of the oviduct, whether it was of the proper kind to produce a worker? Why would the sex turn out worker almost invariably in early spring, and drone only after a long period of breeding? When we accept the elder Dadant's theory that the queen seeks drone-cells only when she becomes tired of the oft repeated pressure on the spermatheca, after having laid tens of thousands of worker eggs, we can readily understand her preferences in an active season of laying.

Those who claim that the Dzierzon theory is incorrect hold that the workers change the sex at will. This is going to another extreme. I had occasion to discuss this view lately in the Bulletin of La Suisse Romande, and found the educators with me.

However, we have much to learn yet. Should this modification of the Dzierzon theory prove true, we will need to change our text-books. C. P. D.

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When a man like E. F. Phillips makes a statement, I feel like endorsing that statement, even if I know "'taint so." So when he modifies the Dzierzon theory I do not arise to dispute his correctness, but I may be allowed to state difficulties—at least questions—that may arise in the lay mind in adjusting itself to the modified theory.

Dzierzon says all the eggs in the queen's ovary are male. Dr. Phillips modifies that, saying in effect that there are male and female eggs in the ovary, the male eggs needing no fertilization, while the female eggs must be fertilized or they will not hatch; a drone-laying queen laying both kinds of eggs, but the female eggs dying because not fertilized.

The man who thus far in his beekeeping career has sworn by Dzierzon has been accustomed to think of all eggs as being alike up to the time of their being laid, by some process the egg being made female by fertilization when it enters a worker-cell, and being left male when a drone-cell is approached. (He may have thought that the will of the queen decided the fertilization when a smaller cell was entered, or that some sort of mechanical pressure acted. To the first of these views Dr. Phillips makes no reference, and dismisses the second, or the Wagner theory, by saying, "Since fertilized eggs may be laid in comb foundation when the side walls are only started and since drone eggs are often laid in worker-cells, this simple explanation cannot be accepted." But the Wagner man had accepted it by saying, "How do you know that when a very shallow cell, or no cell at all, is offered, there may not be a construction practically the same as in a worker-cell? and it's easy to believe that a cog might be slipped in a worker-cell, leaving a drone-egg there, or else that there was a shortage of the fertilizing material in the spermatheca.") But now he is to understand that the eggs are male and female from the beginning, and questions arise.

Is there some regular order in which the two kinds of eggs come, and if so what is that order? Is every tenth egg a drone-egg, or do a hundred worker-eggs, and then ten drone? Or is there no regular order? In any case how does the queen know which kind of egg is coming and which kind of cell to seek? In case there is no drone-comb in the hive except one spot in one of the outside combs, won't it hustle the queen to get there from a distant part of the hive each time a drone-egg comes?

Then, like as not, he'll go to figuring on special cases. The case where an empty frame is given to a strong colony well on in the season, there being no drone-comb in the hive. In 24 hours drone-comb will be built and 2000 or more drone-eggs deposited. As he understands it, there must be 20,000 worker-eggs mixed in with the 2000 drone-eggs. Does the queen lay the whole 20,000 in 24 hours? or how is it managed?

Until he has answers to these and other questions, he is likely to think the new scheme more difficult to understand than the old, and a good bit harder on the queen. C. C. M.

## Drone-Laying Workers

In Gleanings in Bee Culture for Nov. 1, A. R. Clifton, of Capetown, South Africa, describes the temper of their native honeybees and adds:

"Besides their temper, many other unusual traits are exhibited. They are very prone to start fertile workers, and I have seen eggs laid by them while queen-cells and even fertile queens were in the hive."

*Nil sub sole novum.* Nothing new under the sun. This peculiarity of drone-laying workers, assuming this

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duty at unexpected times was accidentally noticed by the elder Dadant, years ago, as mentioned to us in a contribution to the June, 1915, number of the Swiss "Bulletin D'Apiculture." And while glancing over the pages of the first volume of the American Bee Journal, we found, page 138, June, 1861, the following from the pen of Samuel Wagner, its first editor and a remarkable observer:

"Freshly laid eggs have been found within four days after the removal of a queen, and Dzierzon records an instance where a fertile worker laid eggs in a hive which contained a fertile queen."

This accidental laying of eggs by drone-laying workers explains quite a few puzzles and sets at rest the assertion that the worker-bees can change the sex of the egg, by special food, made occasionally by adversaries of the parthenogenesis theory. The eggs laid by workers invariably hatch as drones, of course.

### Requeening Colonies With Fertile Workers

"When introducing a queen by the smoker method, it is advisable to give a frame of brood in all stages to ensure success. Bees must be confined down to the brood-chamber only with a tight wood mat, and the quality of the smoke just right. A laying-worker colony was treated by this method this spring, and in 13 days the introduced queen had brood in three additional frames to the one supplied. Laying workers will accept no queen except by the smoke method of introduction." —J. S. COTTERELL, in *New Zealand Beekeepers' Journal.*

Experiences differ. The Editor of the American Bee Journal has introduced dozens of queens to drone-laying-worker colonies without trouble, by the cage method, with 48 hour confinement. The experiences on this point came as follows: We often had to destroy hybrid queens to be replaced with better stock. Many of these queens were good and prolific, and we disliked to kill them. So we tried the experiment of introducing them to hopeless colonies with drone-laying workers. We never failed, and we ascribe the success to the fact that the queens thus introduced were in the best of health and prolificness. We concluded that it is much easier to introduce a queen to any colony when the queen is in first-class laying trim. The problem is to succeed in introducing queens that have been traveling two weeks or more and are both tired and non-laying.

### Arabian Apiculture in the XIIth Century

The annual bulletin of the Algerian Association, "Nahla," published in Algiers, contains in its 1915 edition a very interesting account of the apiarian teachings of Ibn-El-Awam, an Arabian writer on agricultural subjects, living in Seville, in the 6th Century of the Mohammedan Hegira, which corresponds to the 12th Century of the Christian Era. This writer follows in great part the teachings of Aristotle who lived some 16 centuries previously.

This educator already recommended to clip the wings of the "king" (queen) with scissors, "in order that he be unable to fly away, for as long as the king remains in the hive the bees do no leave it."

He also taught that the males have no sting and take no part in the preparation of honey, and that the females (workers) kill them on account of their laziness.

He erred, however, in stating that the old bees have a very hairy body, and that the young bees on the other hand are smooth and hairless. It is exactly the reverse.

### Influence of Nurse Bees Upon the Young Bees

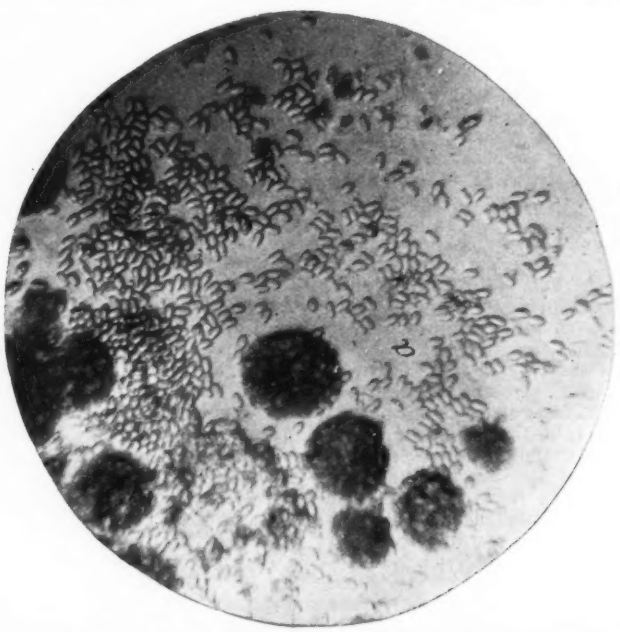
For some time past, the possible influence of nurse bees upon the temper or character of their nurslings has been discussed in the Swiss "Bulletin D'Apiculture." It is held by some that not only the young bees, but the young queens' progeny inherit to an extent the general dispositions of temper of the nurses who supplied them with the pap. Mr. Marguerat, in the October number of the above named journal holds, on the other hand, that queens reared in the same colony, from the same mother and at the same time, will produce workers showing entirely different dispositions in temper, activity, propensity to rob, etc.

If any of our queen-breeders have made experiments and observations upon this question, we would like to hear from them. It is a matter of interest to the entire beekeeping world and is worth investigating.

# A Widespread Bee Disorder

The readers will remember that, in the September number, N. E. France, the Wisconsin State Inspector, made mention of a disease of the adult bees, which depleted colonies 10 to 15 percent. The digestive organs were swollen and full of brown-colored matter; the bees fell in the grass by the hundreds, never to return to the hive. About the same time, a similar trouble was noted in Washington. Concerning this, we have been handed a letter from Prof. Trevor Kincaid, of the University of Washington to J. B. Ramage, of North Yakima, President of the Washington State Beekeepers' Association. We quote from this letter:

"The cause of the malady is a minute parasite, not bacterial in origin, like most disease germs, but a small animal organism allied in nature to the parasites causing malaria in man and the



INTESTINAL WALL OF A DISEASED BEE MAGNIFIED ABOUT 500 TIMES
—Courtesy of Gleanings in Bee Culture.

American Bee Journal

'pebrine' of the silkworm caterpillar. The name applied to this organism is *Nosema apis*, this designation having been applied by a German scientist by the name of Zander, who first made a critical study of the cause of the disease. The germs attack the middle portion of the intestine, which is eaten away by the disease. The minute active spores of the parasite accumulate in the head of the bee, particularly about the roots of the tongue.

"The disease is spread through infected honey, according to Zander. Hives decimated by the disease are attacked by robber bees and the parasites are thus carried in the stolen honey from one colony to another. No appropriate common name has been suggested for the disease, although the term bee malaria' might very appropriately be used. The name 'Isle of Wight disease' has also been applied to it as it seems highly probable that our disease is identical with the malady that swept over considerable areas of Europe.

"As to the symptoms of the disease, they are striking, and you will not readily confuse it with anything else that destroys the bees. As soon as the disease attacks a colony, the bees will be found in a dead or dying condition upon a limited area of the ground immediately in front of the hive. When the attack is severe the ground may at times be fairly carpeted with dead bees. The insects seem to be unable to fly back to the entrance of the hive and crawl about until they perish, or until they are dismembered and carried away by the wasps.

"Considerable variation seems to exist in the susceptibility of the several hives in the apiary. Certain stocks seem to be relatively resistant. I have been keeping just a few hives for experimental purposes and for my own pleasure, and I find that of three that were attacked two were entirely destroyed while the third one recovered and is now in apparently excellent condition, with no bees dying so far as I can see. About the same story comes to me from the other beekeepers who have suffered.

"As to the distribution of the disease, I may say it has been reported from a number of localities in western Washington, and Dr. Phillips writes me from Washington, D. C., that it has appeared in several sections of the Middle West, notably in Wisconsin. It appears also to be present in California.

"While I was absent from the city about a month ago, my assistant informs me that some person from eastern Washington called on me to secure advice concerning a bee-disease, which from the description given is evidently the same thing as we have with us. I did not secure the name of the person or his address, but I understood he was from the Yakima district. I hope you are not visited by the malady, but it is safe to predict it will in due time make its appearance in all sections of the country where beekeeping is practiced.

"As to remedies, none have been suggested that seem likely to be effective. The prevention of robbing, together with the destruction of the hives seriously affected, seems to be a wise precaution. It does not seem likely that a suitable medicine can be fed to the diseased bees. Requeening from resistant stock will probably help matters out in the long run. I wish I could suggest something that would be more immediately beneficial."

The *Nosema apis* mentioned in this letter was described simultaneously in the American Bee Journal and Gleanings in Bee Culture, in November, 1909. In 1910, in the August number of the American Bee Journal, the present editor supplied information concerning the different causes ascribed at different dates to this malady. English scientists had discovered a bacillus which they called *Bacillus depilis*, and which they thought caused the disease. The word *depilis* was given because the bees attacked with the disease often lose their hairs and become shiny before death. Cheshire called the same disease "bacillus Gaytoni," because a Miss Gayton had supplied him with diseased bees.

Previous to the Zander discovery, the Germans also had described a micro-organism, which they called *mucor-mucedo*, and which is described in Thos. W. Cowan's book, "The English Beekeepers' Guide Book."

A similar disease, or perhaps more correctly several similar diseases of the same kind have been noticed in widely separated countries, in France as Mal-de-Mai, or vertigo, in this country as paralysis, from the North to the South, and from California to Florida. In Italy a similar sickness was given the same name as in France, Mal-di-Maggio. In the Province of Ancona, it made terrible ravages among the bees several times in wet springs. During our visit there, one of the most active beekeepers assured me that there was more or less of the disease apparent among the bees during the entire summer.

In the "Rucher Belge," May and June, 1914, a Mr. Bage described several forms of "fullness of bowels," which he called "refertum pollinis, refertum viscini, refertum dextrini, refertum nutriciæ." We wrote to this publication for more ample information, but the war was just declared and we have not only heard nothing from the editor of the "Rucher Belge," but do not even know whether he is dead or alive. If he reads these lines we would be glad to hear from him.

Now as to the remedies proposed: Mr. Poppleton, of Florida, sprinkles the combs and bees of the diseased colonies with powdered sulphur. This kills the diseased bees and they are carried away and a cure seems to result. The brood must be removed previously as the sulphur would kill it. It is a very heroic treatment. The Italians use a syrup made of honey diluted with hot water and in which herbs with tonic properties have been boiled, such as thyme, lavender, ginger, savory, etc. This is fed to the diseased colonies. The English do not seem to succeed in eradicating Isle of Wight disease, except by renovating and disinfecting their hives.

Dr. Zander recommends giving the bees salt water as a preventative and cure.

Mr. E. G Le Stourgeon, head of the Southwestern Bee Company, of San Antonio, Tex., says that in his opinion the disease is caused by excessive moisture. He succeeds in stopping it by shaking the bees of diseased colonies on dry combs.

Excessive moisture is usually present where the disease exists. The Isle of Wight, where it is most deadly, and its vicinity in England are very damp countries. In our locality, the disease is to be found, at its incipiency, after long, cold winters, when a wet spring follows. We often thought it caused by constipation of bees that had been confined a long time to the hive. In France, Italy, as well as in many parts of the United States, it follows spells of damp, unpleasant weather, that has confined the bees to the hive.

Whether *Nosema apis* is really the cause of this malady, or only an accompanying symptom may be ascertained after experiments which will require specific knowledge and must be conducted in special laboratories. *Nosema apis* has been found in healthy bees in small numbers, but this is not an evidence either way, since the causes of disease appear to originate throughout the world. It takes particular conditions for their spread in an injurious way.

## A New Bee Disorder in Southern California

BY J. E. PLEASANTS.

THERE has recently appeared in a few apiaries in my territory a disease apparently of the adult bee. It also affects the larva to some extent. This at first caused it to be taken for European foulbrood. The adult bees lose all energy, crawl out of the hive, tremble and die. A colony becomes gradually weaker and weaker, somewhat as they do in paralysis. But we have been unable to find any in the swollen condition as in paralysis. One beekeeper told me that his had acted somewhat as though they had been poisoned, rolling out of the hive, quivering, and soon dying. In some hives there would be dead bees an inch deep. But as there is no evidence or any way of their being poisoned, I think it is just symptoms of the same disorder.

Mr. John F. Green, who first called my attention to the trouble, is recently from New York, and has had a great deal of experience with European foulbrood. He is convinced, as I am, that this is something entirely different from either that disease or paralysis. Mr. Green and I spent several days among the apiaries showing the symptoms just described, and he told me he had tried all means in his power to check the disease. He has caged the queen, requeened, etc., and while in some yards he had good results, in others all efforts resulted in failure. This would show that the fault does not lie with the queen, as the same stock of queens would help in some instances and fail in others. Mr. Green's No. 3 yard is only about a mile and a half from No. 7, but over a mountain. No. 7 is badly attacked by the disease. No. 3 is in the finest condition of health.

This disease seems to be similar to

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the disorder described by Mr. Calcutt, of Seattle, Wash., and Mr. Miner, of Fowler, Calif., in Oct. 1 and 15, Gleanings in Bee Culture. This is also mentioned in the same numbers of Gleanings as having appeared for some years in the Mississippi Valley States.

Now, while I am sending samples to Dr. Phillips, I would also like to ask information from any one who has had any experience with the disorder. Can any one give the symptoms of Nosema? Are the symptoms similar to this? We noticed the presence of the yellow-jacket wasp around all the hives infected, as others have in different localities. This has never been noticed in any other disease.

We have made an encouraging gain in our fight with European foulbrood here, though I thoroughly agree with Mr. Byer that it is a much more serious trouble than American foulbrood. For one reason, we know exactly how American foulbrood is carried, and that is the whole battle in prevention. And even if you get it, it is easier handled, but we now seem to be "up against" something new, and any light on the subject will be most thankfully received.

Our weather conditions have been excellent during the early winter. We had two good rains and very mild clear days following. The bees are, of course, gathering no nectar at this season, but are bringing in large quantities of pollen from Artemisia bloom.

Orange, Calif.

## No. 13.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(*Photographs by the author.*)

THE white clematis, *Clematis virginiana*, is commonly known by the name of virgin's bower, but also has several other local names such as love vine, traveler's joy, and Devil's hair. Figure 62 shows the delicate white blossom and the leaf, and No. 63 shows a mass of the vines on a roadside fence.

The range of the plant is from Nova Scotia and Ontario west to Lake Winnipeg and Nebraska, and south to Louisiana and Florida. It may be expected almost anywhere east of the Mississippi river. It is a slender climbing vine growing on the borders of woods, roadsides and hedgerows. The blossoms are white and fragrant, blooming in midsummer. It is much sought by the bees, and apparently produces considerable nectar. It is doubtful whether the plant is anywhere sufficiently abundant to make an appreciable difference in the production of the hive.

Richter, in his "Honey Plants of California," reports a related species, the hill clematis, *Clematis ligusticifolia*, as common in the hilly districts almost throughout California. It is said to produce "a great deal of pollen and probably some honey," but it is not known to produce a surplus.

IRONWEEDS.

There are many species of the ironweeds to be found in many countries. They are common in Asia and Africa as well as North America. They are common from New England south to Florida and west to Dakota and Texas. Figure 64 shows the flowers of the western ironweed, *Vernonica fasciculata*, and No. 65 a clump of the common ironweed, *Vernonica baldwini*. In the middle West they grow very commonly in pastures, and the purple blossoms are very conspicuous in late summer. The writer includes them among the honey-producing plants with some hesitation, although the bees work upon them to some extent. Since they are frequently reported in this connection they may be of more value in other localities than local observation indicates.

Atlantic, Iowa.

Copyright: 1916, by Frank C. Pellett.

FIG 62—WILD CLEMATIS BLOSSOMS AND LEAVES

## A Visit to the Sage of Marengo

E. G. LESTOURGEON.

MARENGO! There are few bee-keepers who have not felt a sort of grateful warmth at the mention of the name that has become famous to us as the abiding place of one of the kindliest and most loving of the host of kindly souls that have made the keepers of bees a peculiar people. When my duties brought me as a casual visitor to the office of the American Bee Journal, and its earnest young manager, Mr. M. G. Dadant, mentioned the fact that he was contemplating a visit to Marengo, I at once plead to be permitted to accompany him. I could not have hoped for such good fortune when I left my far off Texas home and was thrilled at the prospect.

If I had created in my mind an idea of Dr. Miller as an *old* man; if I had pictured the Sage of Marengo as one who, conscious of his years of labor and of his success and fame, had shut up his mind to suggestions from humble fellow workers; if I had expected any hint of egotism or intolerance; if I had felt that one in his station and at his age might be excused for a show of impatience with the ignorance of others—I was riding to a fall! My anticipation of the pleasures of the visit had not in any wise prepared me for the warmth and kindliness of its actuality.

We reached the pretty little town of Marengo about noon. We had been told that our friend lived some three miles from the station, and were preparing to hire a conveyance. Mr. Dadant rang up the Miller home to advise them of our coming, and learning that

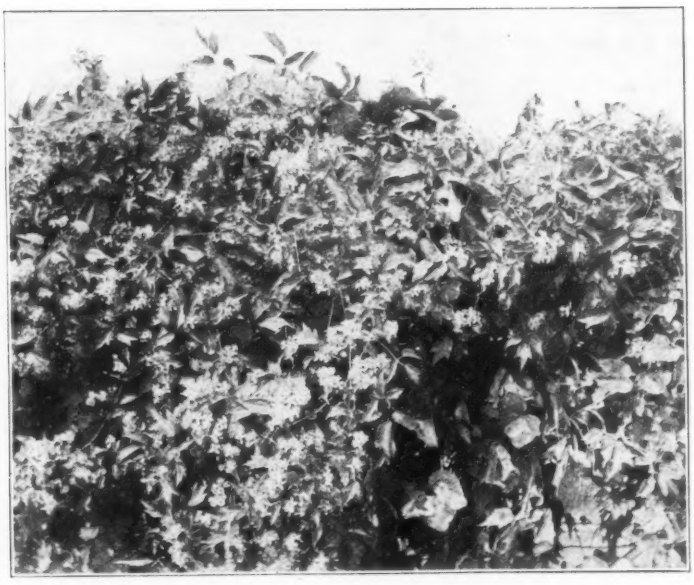

FIG. 63—WILD CLEMATIS ON A ROADSIDE FENCE

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it was only a mile, we determined to walk. We asked only the general direction as we wanted to see which of us would first recognize the place from the pictures we had seen. Hastily eating a lunch we set forth, and it was our great surprise, after going but a short way, to hear the cheery hail from an approaching buggy, and to look up into the smiling face of Dr. Miller himself. He had hitched up and come to fetch us with that hospitality that marks his every action toward his guests.

Could this smiling, boyish figure be the great Dr. Miller? Far beyond the four score mark, a man who knew and advised with our grandparents, one of those first adventurous spirits that pushed the genius of the new ideals of America across the Western Reserve when Chicago was only a frontier outpost of the far, far West, and yet so full of the spirit of youth that his years fall from him like a mantle, and almost instantly a feeling of fellowship springs up in the heart at the infection of his smile.

"Come, get right in here. There is room enough. Each of you give me a knee. I will sit upon your lap," and laughing and chatting like three boys upon a lark, we are driving down a beautiful village street toward the country.

The Miller home is back from the road upon a hilltop that gives a view across the rolling hills, clustering trees and fertile valleys checkered by farms and orchards and patches of meadow ground. The drive is a noble avenue of basswood planted by Dr. Miller himself, and, he told us, the only basswood in his vicinity.

To younger men, and especially to us in this newer Texas land where I was born, there is a feeling of awe when a man points out to us a row of stately trees, and says, "With my own hands I planted them;" when in the orchard he can say, "This tree bears two varieties of fruit, *forty years ago* I grafted it." How much more striking when such statements come from a mouth wreathed in a boyish smile, and clear bright eyes twinkle from a sunny pink-cheeked face that belies the well trimmed fringe of a white beard.

Dr. Miller is remarkably agile and sprightly. In explaining to us how and why he cleated the ends of his hives he demonstrated by quickly stooping down and picking one of them up almost shoulder high where he turned it about for our inspection. He uses much more entrance space for his bees than we do in the South, and when it was remarked upon, he at once got down on the ground to point out to us the reasons why and to show the bees clustering beneath the frames.

FIG. 64—BLOSSOMS OF WESTERN IRONWEED

FIG. 65—CLUMP OF COMMON IRONWEED

His movements have all the swing and spontaneity of a man less than half his years.

Upon arriving at the house we were met by a welcome that gripped the heart with its warmth and cordiality. Some one has said that back of every successful man there is a woman. No wonder then that Dr. Miller shines so brightly in our sky, for back of him are *two* women. Mrs. Miller and Miss Wilson are no less interesting than the Doctor. The thing that struck me the most was the smiles on every face. I have heard of women afraid to smile for fear of causing wrinkles. I prescribe for any such a visit to Marengo, and a half hour chat in the sunny sitting room with these two beautiful bright-eyed women.

Dr. Miller's family are great lovers of sunshine and of nature. They bring these things into their home life both figuratively and literally. The favorite room is one with large bow windows opening to the South. When we were there the golden Indian summer sunshine was streaming into the room through the fronds of many varieties of ferns that grow in the window seat and from hanging baskets in the alcove. One cannot imagine a cozier place, nor a happier one, as we saw it mellowed by the merry jest and quiet laughter of these old-young people.

Dr. Miller's work is not done. We ventured to make suggestions relative to a certain book, yet uncompiled, that will be, when published, of greatest interest and moment to the beekeeping world, and it was good to see the earnestness in his manner as he noted and weighed our views and spoke of his future tasks and future hopes. Like all great souls he is unaffected and modest. He does not underrate his work nor its value to his beloved vocation, but he assumes no boastfulness nor egotism concerning it.

These, then, are the three impressions most vividly made upon me by my visit to Marengo:

Youth—The springing font of age, that frugal living and honest labor has secured for our great teacher.

Cheerfulnes—The bright and ever shifting smile that radiates from Dr. Miller's face and is reflected back upon him by all with whom he comes in contact.

Earnestness—The modesty of his bearing and absence of pride or boastfulness, underlaid with a feeling of consecration to a work that he knows to be of value and of aid to others.

San Antonio, Tex.

[While Dr. Miller is always courteous to visitors, we know that the demands on his time are many, and that his work taxes his strength to the utmost. He found it necessary to discontinue answering questions by mail, several years ago, and his age forbids inviting every beekeeper that comes by to visit him, much as he would like to do so. We write this footnote to caution our readers against imposing upon Dr. Miller's generosity with no other reason for a visit than the desire to meet our old friend at home. "A word to the wise is sufficient."—EDITOR.]

## Clean Section Honey

BY FRANCIS JAGER.

THERE is no doubt that the greatest obstacle for obtaining a good price for comb honey is the dirty condition in which the sections are put on the market. We have now national grading rules which call for sections *free* from propolis for fancy and No. 1 grades. This is one good point for which all honor to the National convention at Cincinnati aside from other points on grading comb honey, which should have been left over for another year or two for wider discussion before being adopted.

But why limit cleanness only to fancy and No. 1 grades? It hurts the honey trade if *any* sections get to the market in a dirty condition. Most of the comb honey marketed at present looks more or less stained and unattractive on account of propolis.

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I noticed in the American Bee Journal an article by Frank Rauchfuss, saying that propolis stains on wood cannot be removed entirely. Yes, they can, and quickly and cheaply, too. Not only they can, but ought to be removed.

There is an easy and cheap way for cleaning the sections. The Minnesota Beekeepers' Association will testify that section honey of all grades *can* be put on the market in sections as clean and white as when they come from the factory. Such section honey was on exhibit at their December convention in Minneapolis.

When sections are removed from supers, the coarse propolis is first scraped off with a small sharp knife from the outer sides of the section with one or two strokes of the knife to each side. The four edges are then scraped, with the point of the knife, protruding from between the thumb and the first finger just far enough to clean the edge of the section and not injure the cappings. In the same manner, with the point of the knife, the propolis for about ⅛ of an inch inside of the section may be removed. One can soon learn to do this without hurting the cappings or dropping any into the cells next to the wall.

This, however, is only preliminary work. The sections must now be *sandpapered*. A simple sandpapering machine which every beekeeper can afford is used for this purpose. By foot power a round wooden disc, one foot in diameter, is put into rotary motion. On this disc is attached a sheet of sandpaper of the same size as the disc. Three tiny nails near the outside of the disc will hold the paper firmly in position. Now a board is fitted in, about one-third from the bottom of the wheel, in such a manner that the sand wheel will revolve in a slot, with two-thirds of the wheel above and one-third below the table formed by the board. There should be a quarter inch space between the face of the sandpaper and the board through which to convey all dust below the table.

After starting the machine, take a section in your right hand, lay it side down on the table and just touch one side (the dirtiest) against the sandpaper. In a fraction of a second it is as clean as new. One, two, three, four, and the outside of your section is clean. Set your section now upright; touch the edge of the section against the sandpaper; turn it around and do the same with the opposite edge. You can do it as fast as you can count one, two, three, four, five, six. In this manner all sections, fancy, No. 1, culls and all, can be made attractive and marketable; the wood will look as clean as new.

One sheet of sandpaper will clean a hundred sections. It would help the honey trade if such a section polishing machine was put on the market. Number 1 comb honey in sandpapered sections was sold at Minneapolis at $4.31 per case, or nearly 20 cents a pound, when plenty of daubed section honey could be bought on the market at 12 cents. The sandpaper machine used by the writer cost $10.

College Farm, St. Paul, Minn.

[Section polishing machines have been described from time to time. Probably too little attention is paid to this subject. The machine above described is certainly very simple.—Ed.]

## Swarm Control in South Texas

BY HENRY BRENNER.

At the beginning of February we go through the apiaries to see if the colonies have enough stores to start brood-rearing which takes place about this time in apiaries along the river courses. Weather conditions, of course, determine the exact date. We have had many cases where brood-rearing started as early as Jan. 15, and sometimes, if about Feb. 1 we have wet or cold weather, brood-rearing starts a little later. February 1, is about the time that it generally starts. In this latitude there is practically no cessation of brood-rearing at any time during the winter. There is seldom a time when no brood is being reared in the colony. But by brood-rearing, as the term is used above, we mean regular operations of the bees in building up the colony for the spring flow.

At the initial visit to the apiaries at this time we do not disturb the brood-nest or break up the cluster, but if we find a colony with light stores we give it a frame from another colony that can spare it. We do not put this honey in the brood-chamber however, but we put it in the super above the brood-chamber. If no colony in the apiary has stores that it can spare we fill empty combs with sugar syrup and some honey added which is just as good for brood-rearing, only it does not last so long and we have to give more than if we gave sealed frames of honey. Generally we put in two or three frames according to the amount of brood and the strength of the colony. Even at this early date quite a bit of pollen can be gathered from early bloom and some nectar is beginning to come in. In our apiaries in the prairies and away from the river we start work two weeks to a month later than in our river apiaries.

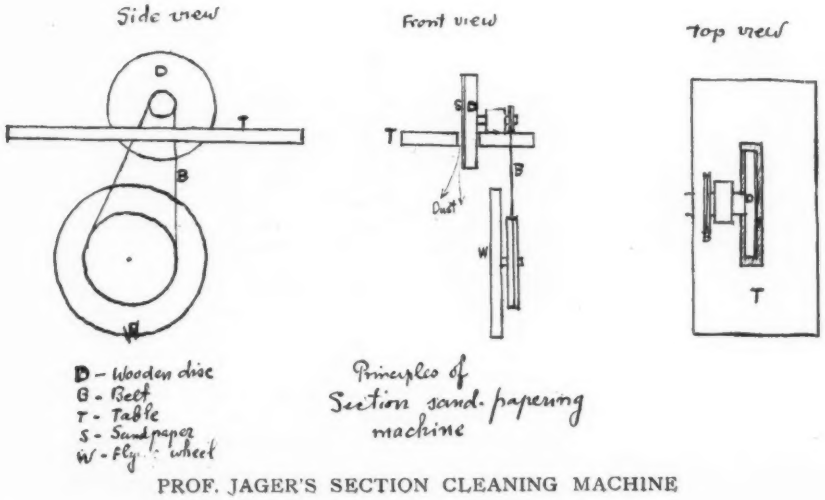
At the end of February we see whether the queens have enough laying room. Should they be crowded we remove the honey from the brood-nest and replace it with empty combs. It is not wise to break up the brood-nest even then, but we put the empty combs on each side of the cluster, and if they have frames filled with honey we raise them into the super. At this time we mark the colonies having drone-brood as they will be the ones likely to cause trouble in swarming. Only about 10 percent will show the swarming impulse. At every visit it is well to see that there is plenty of honey and to equalize stores from the richer hives.

At the river apiaries our bees could winter with practically no surplus stores if they could fly every day because there is always something in our valleys on which they could feed. It happens some years that we have periods of cold and wet weather in the early spring, and if we have not provided stores the bees will drag out the young brood and contract the brood-nest to two or three frames. They do this, not because the weather is too severe for brood-rearing, but because the bees fear famine.

In early March, if we find as many as six frames of brood in the brood-nest, we raise one frame of brood out of the center of the cluster into the super and replace it with an empty comb. Our experience is that if bees confine their brood-rearing to the lower story, even though they apparently have plenty of room there, they are more likely to contract the swarming fever, and our object in thus early raising a frame of brood to the super is to encourage the queen to extend her operations to the two bodies.

The few colonies which we had marked as having drone-brood we now look over carefully to find if there are eggs in queen-cells or if new queen-cups are being formed. If we do find them, we spread the brood about over the hives and, of course, destroy the queen-cells. The amount of spreading depends upon the strength and condition of the colony. If the brood is spread too much and a cold night occurs too soon after the spreading there is loss from chilled brood. Some colonies seem to have a passion for brood-rearing and go far ahead of the ability of the colony to protect and cluster the brood.

After the brood has been spread in colonies that have shown an inclination




PROF. JAGER'S SECTION CLEANING MACHINE

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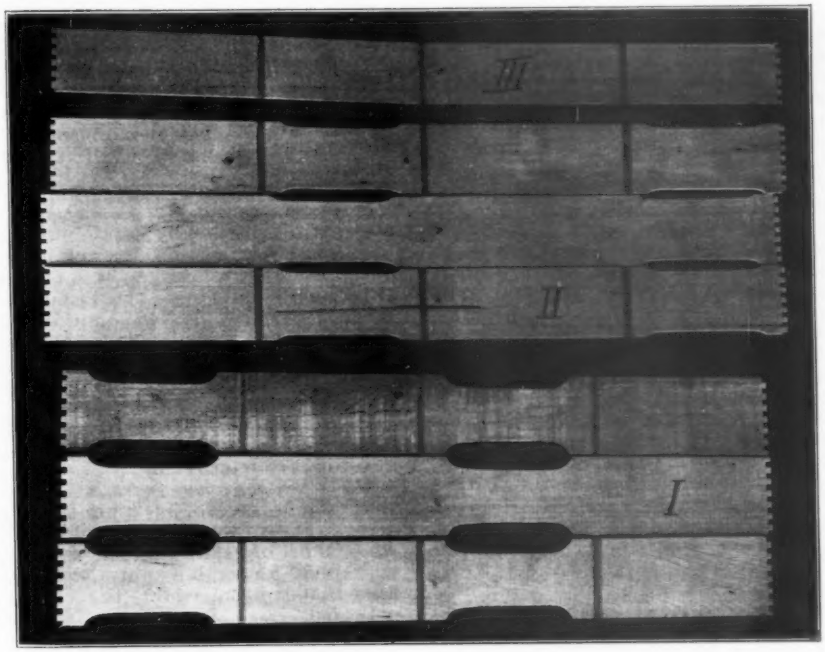



DIFFERENT TYPES OF SECTIONS

to swarm, it is well to reduce the entrance for a few days to keep out the cold air.

Ten days later we look again over the colonies that had the queen-cells started. If the bees do not appear to have given up the swarming notion we place the queen on one frame of brood in the brood-chamber and fill up with empty combs or full sheets of foundation. The balance of the brood we put in the super over a queen-excluder. Should there be too much brood we give the surplus to other colonies, or if it is not desirable to weaken the colony, we place more than one frame in the lower story with the queen. Any colony found with nine frames of brood or more in the early spring may be treated in the same way with good advantage whether it shows the swarming impulse or not. About nine days afterward we look over the brood above the excluder for queen-cells which we destroy.

Every year we find a case or two of a young queen laying in the super above the excluder, where we have missed a cell, but no harm was done in such cases. The excluder between the two queens prevented the issuance of a swarm. One of the queens should be removed, however, prior to the honey flow.

During swarming time we go over the yard in this way three times, at intervals of nine or ten days, and in our home apiary we have not had a swarm for the last five years. In our outapiaries we have had one or two swarms for lack of time or because of neglect.

A beginner must exercise caution in spreading brood in early spring. Should the brood-nest be too much extended more harm than good is likely to be done.

We do not make a practice of clipping queens; that is to say we never hunt for the queen with the object of clipping her wings, but whenever we find a queen handy we clip her with a pocket knife and mark the hive with the date. Then, should we find next year an unclipped queen in that hive, we have no fear of swarming and the manipulations described above are practically unnecessary. This is in fact the sole advantage we find in clipping the queens at all, and the only reason we practice it. Without a knife and pencil, however, we never do any work in our apiaries in the spring.

The reasons for swarming are want of room, age of queen, too much heat, too much surplus stores, too many bees, or excess of brood.

Any colony before preparing to swarm will always rear drone-brood. If no drone-comb is in the brood-nest you will find drone-cells in among the worker-brood. Should there be no drone-brood, it is an indication that they have a young queen and there will be no danger of swarming. This colony may be left alone safely on subsequent visits to the apiary.

Seguin, Tex.

## Naphthaline as an Insecticide

BY DR. A. F. BONNEY.

FROM my first experience with bees I was not satisfied with bisulphide of carbon as an insecticide, as the vapors are very explosive, dangerous to inhale and extremely fugitive. I was on the outlook for something without these disagreeable features, and I have, I believe, found it in naphthaline, to which I gave a thorough test in the summer just past by using nothing else in my yard, with the result that I did not lose an ounce of comb, although there were several piles of hives filled with brood-comb exposed out-of-doors from the middle of May until well into June. To make more certain I purposely exposed a sheet of brood-comb, then removed it to the honey-house, put it in a pasteboard box with a couple of small balls of naphthaline and never saw a worm.

Naphthaline in the form of little balls is called "Moth Balls," and is used by housewives to repel moths from fur garments. It is also known as "Tar Camphor," for in a molded mass it much resembles gum camphor physically. Naphthaline is a benzine hydrocarbon with a chemical formula of $C_{10}H_8$; it forms white crystalline leaflets, has a peculiar and not disagreeable odor suggestive of coal tar, volatilizes at all temperatures above freezing and more rapidly the warmer it gets; melts at about 155 degrees Fahr. Its vapors kill most fungi and most insects.

A curious thing about this substance is that if a hive is full of the odor and there is honey in it the bees will go in and do not seem to mind the smell nor suffer any inconvenience. It may not be poisonous to them, or it may take prolonged exposure to the drug to cause death in any insect or its larva.

Just now the price of naphthalene is high compared with a year ago when it was abundant at 7 cents wholesale, but even at 30 cents, the present price, it is a cheap germicide for the beekeeper, as a couple of naphthaline balls weighing about one-fourth of an ounce will protect the combs for weeks if not months. It is molded into balls, so it may be put into any shape by heating in a tin dish set in boiling water. Little sheets or cakes weighing half an ounce would be a good size, and molds can be made of thin pieces of wood, which must be wetted when used.

Buck Grove, Iowa.

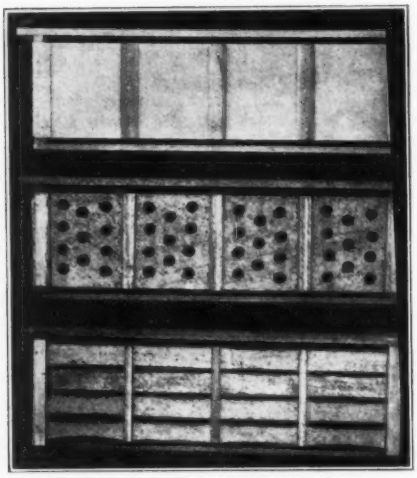
[Naphthaline is splendid to repel insects, but will not drive them out once they have become established. We have no doubt that moth balls would protect the combs perfectly if used before the eggs are laid. Once the combs become infested we very much doubt whether the naphtha will kill the mothworms or drive them out. If the beekeeper would take the precaution to keep naphtha in the boxes where unused combs are stored there would likely be little damage from moths. The past season's experience would hardly be conclusive, in the use of this drug for the wet cool weather has been unfavorable to the moth.—EDITOR.]

## Sections and Dividers (Separators)—Are They Perfect in Construction?

BY F. GREINER.

DURING the past 30 or more years the beekeepers and the supply dealers of our land have exerted themselves to the utmost and have so perfected the accessories we need for producing comb honey in the best possible shape, that we might say the desideratum has been reached. If I take it upon myself in the following to point out where other slight improvements may be made it is because it sometimes takes many years of experimenting, testing and trying to find out one wee little fact, and my experience shows where certain slight changes could be

American Bee Journal



DIFFERENT STYLES OF SEPARATORS

made to the advantage of the honey-producer and his product.

The one-piece 4¼ beeway section is the one most commonly used. When it was first originated the beeway was cut ¼ inch deep, thus making the top part 1½ inches, the sides 2 inches; in other words, maintaining a difference of ½ inch in the respective widths. The difference between top and sides, when the section was made of four pieces, was only ⅛ inch, which was sufficient, and also just accommodated the glass used in glassing our sections at this early time. It has always been a puzzle to me why, when the one-piece section was adopted, the depth of the beeway (*inset* as it is called by some manufacturers) was increased.

Since 1885 I have had the beeways cut ⅛ inch deep in all my sections and found this depth sufficient; seeing no reason today, after 30 years of extensive beekeeping, to make any change. It is the best, because it protects the honey produced the most; but when I order sections to be thus made, I have to pay usually a little extra for setting machinery. A few years ago some 4¼ sections were shipped me with beeways ⅜ inch deep, as shown in my illustration No. 1. This was very bad, and has been objected to by every one who came to me for sections from that lot. I have still a small stock of them on hand.

Number 2 in the illustration shows a section with properly cut beeway or inset ⅛ inch deep.

Number 3 shows my no beeway or plain 4x5x1½ sections. I am using these in my wide frame supers of which I have several hundred in use. These wide frames are provided with fences or cleated separators of different pattern, some of which are shown in my second illustration. In the first place I wish to draw the attention of the reader to the cleats and their different widths. The cleats on the lower frame are only ¼ inch wide; the cleats on the middle frame are ½ inch wide; those on the topmost frame are ¾ inch. Having used them side by side in the same super, I believe I can judge now which is the most satisfactory. When the fence or cleated divider of any kind was first talked of the width of the cleat was under discussion in the Bee Journals, and as I favored the wider cleat, I built the separators that way. At the same time I built a few with ¼-inch cleats. Later I bought many regular Danzenbaker fences as shown in illustration, lower frame, and still later I made up perforated cleated separators with ½-inch cleats. The result of my observations is this: The ¼-inch cleat is not as satisfactory as the wider cleats. The better the sections are filled the oftener we find the sealing at the edges drawn clear to the separator and attached to the cleat. Removing the sections from the holders breaks the sealing along the edges and a leak is the result.

I would not say that this ruins the honey for shipping, but it is at least a drawback. The ½-inch cleat is as wide as necessary to prevent all trouble here spoken of, and is therefore to be preferred. With the ¾-inch cleat we gain no more than we do with the ½ inch, and we take into the bargain the undesirable more meager filling. In other words, the face of every section filled in supers with the wider cleats shows a wider depression near the sides. So I prefer for best result the ½-inch cleat whether used on fences or solid separators.

Grave doubt still lingers in my mind as to whether the freer communication the fence gives to the bees as compared with the solid separator is of any account. The Betsinger wire screen separator may be superior because of the very free communication it affords, but I have not discovered any advantage in favor of the fence as against the solid or perforated separator in that respect. I believe almost every honey-producer has found the fence to be a short-lived affair, whereas the solid separator lasts as long as it is taken care of. My illustration shows how bees will often enlarge the spaces of the fence. Comb honey built between such damaged fences presents an undesirable washboard appearance. I have had to discard quite a few fences on this account, particularly such as were made from very soft timber. If fences were made from hard wood or semi-hard wood, like soft maple, elm, etc., as I have suggested before, there would be no trouble, but they would then cost more.

Naples, N. Y.

## Honey-Plants of Cuba

BY D. W. MILLAR.

THROUGH the courtesy of Dr. I. Juan T. Roig, Chief of the Department of Botany of the Experimental Station of Cuba at Santiago de Las Vegas, I give the following information about the flowers, pictures of which I enclose:

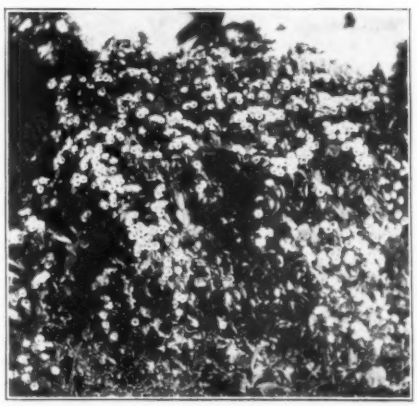
No. 1. Panel of Campanilla honey with flowers around it. These flowers are Campanilla Blanca (white bell-flower) or Aguinaldo, the famous plant from which our choice honey is produced, sometimes called Miel de Pascua or Christmas honey on account of its being harvested principally in December. These Campanilla vines spring up wherever there is a clearing and bloom yearly without re-seeding.

No. 2. The Guayaba (Guava) is a bush and is about the worst pest we have. It springs up in pastures as soon as cleared, and is very hard to kill. The picture shows the bloom and fruit, both picked from the same bush at the same time. I have seen reports of its being a great honey-producer, but my observations would not confirm this. It is principally renowned for the jelly made from the fruit.

The red Coralillo (*Antigonon leptopus*) originating in Mexico, is cultivated here. It blooms every day in the year, and is the greatest honey vine I know. It is covered with bees at all times and all day. I have planted hundreds of the seeds and small vines, but have never had enough to be of any value. They have not died, but simply have not acquired the necessary growth to give enough bloom to notice any results with the bees. It makes a most beautiful arbor covering.

*Malvastrum coromandelianum* is a very common weed, but a good honey-plant. The cattle eat it quite freely when short of grass. On the right is a white bell-flower, but not the Campanilla Blanca, from which the honey is gathered.

Holguin Cuba.



CAMPANILLA IN CUBA

## How I Became a Beekeeper

BY C. T. OHLINGER.

WHEN about 25 years ago I was installed as pastor of a small parish in the city of Newport, the aristocratic summer resort of Rhode Island, I had little thought of ever becoming a beekeeper. In a city surrounded by salt water, where most outdoor diversions have a nautical twist, where yachting, bathing, fishing are the Alpha and Omega of sports, the idea of beekeeping hardly suggests itself. Besides, the city pastor who conscientiously looks after the welfare of his congregational hive has little time for hobbies or diversions be they ever so beneficial to one who works with his brains seven days in the week.

After several years of toil, my health failed and a change was imperative. The perplexing question, what to do next, was solved when I received a call from a country parish in the highlands of western New York. There was not much preaching and still less visiting to be done. I was to be the first resident pastor in the smallest town of the Union, and all concerned advised me to

accept. I did. The change from a thickly populated manufacturing State to that out-of-the-way rural spot was so abrupt that I felt out of place and had to bring a good part of my adaptability into play to become reconciled to the new situation.

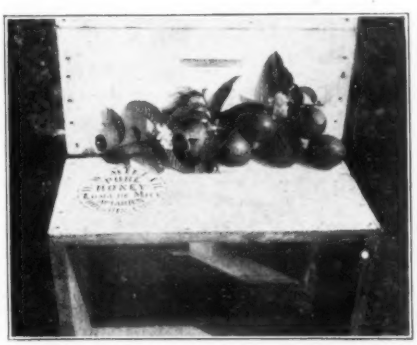
My church was located two miles distant on Basswood Hill, in the center of the "town," said town supposed to be six miles square with an enrollment of 90 qualified voters at the last election.

One day one of my parishioners, a thoughtful man, brought me a beehive. He thought it would be well for me to tinker with something of this sort. He claimed for it both pleasure and profit. It was accepted. I recalled that my grandfather in Europe had been a beekeeper whose rows of straw skeps I often watched in the summer waiting for the "big bee" to come out of which I heard him speak occasionally. With visions of my boyhood days I readily seized the opportunity of becoming a beekeeper myself, though it had to be on a small scale.

I knew nothing about bees, so I ventured a few questions. The man who

CAMPANILLA HONEY

brought the hive told me that there were yellow bees, called Italians and black German bees. The yellow bees, he said, were considered gentle, while the "Germans" had a bad reputation as ferocious stingers. Mine were mixed, the blacks predominating. Furthermore I was advised to give the hive some kind of winter protection in the shape of an old carpet or quilt, and in order to keep the ants out, the hive should be raised up from the ground. Of course, no honey could be expected until the bees had swarmed next summer.



GUAYABA

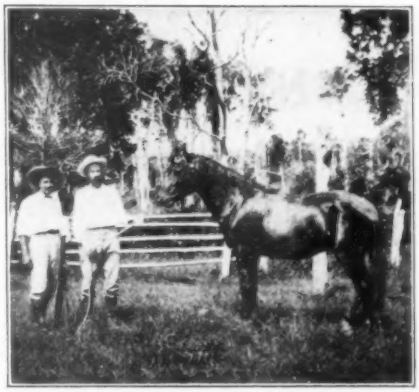
Being thus thoroughly instructed in beekeeping, I felt competent to take up the new pursuit, and that same evening I began operations according to instructions. It was an old 10-frame Wisconsin portico hive with a telescope cover glued down tight all around. Before throwing the carpet over the hive curiosity prompted me to pry up the cover to take a look at the bees. They were all alive; in fact, very much so. Almost automatically the cover dropped back onto the hive. It gave a nice thud. The carpet wasn't half in its place when the entire apiarian force within the hive was already mobilized against the bungling intruder. There really wasn't time to contemplate with what precision and determination the attack was made. I beat a hasty retreat to the nearby woodshed carrying the advance guard on my black fur cap.

The noise and commotion caused by this sudden outbreak of hostilities aroused the whole family. They all stood in the doorway, at a safe distance, half frenzied, watching, advising, sympathizing with father, the victim of innumerable, merciless infernal bugs. I was fanning the air like a windmill. The excitement did not subside until the last wretch of a bee was tread under my feet. Surely, I felt that some "capital punishment" had been inflicted upon me. The burning impression of several well-aimed stings behind the ears and two similar punctures on the upper lip emphasized the wisdom of a strict neutrality toward a hive of live bees irrespective of color or nationality.

All winter long the carpet hung over that hive in a neglectful way. When spring came and it was time for all nature to awaken, my bees continued their peaceful slumber.

I was glad they were dead. For now I could investigate the ins and outs of a beehive without fear of being murdered. Feeling reasonably sure from outward observation that all within were dead, really dead, I opened the hive. What I saw was new and instructive. Of course, the suggestion of a covering was misunderstood. It should have, the books explained, been placed directly over the frames inside of the hive. As it was, the bees froze to death, huddled together between the frames, a starved, soiled, sorry-looking lot, offering a practical illustration of poor wintering.

I now dissected the hive, took out the frames, one by one, with an eye to their size and shape. I studied the construction of the combs, the worker drone and queen-cells and their position. With the aid of a manikin I became familiar with the anatomy of the queen, the workers and the drones, their functions and habits. What I read was supplemented by actual observation later on. During the first winter in the country I burrowed through considerable bee-literature, domestic and foreign, and when the season was at hand I was ready to put my book-knowledge to some practical use. Without the book, the hive, no doubt, would have remained a mysterious puzzle. Beekeeping, I found, is a conglomeration of complicated details which must get fixed in one's mind be-



D. W. MILLAR AND A NATIVE CUBAN

fore anything like success can be attained.

I bought 10 new colonies. I increased and decreased, voluntarily and involuntarily. Each season had its ups and downs. There was profit and loss, pleasure and pastime galore. The science of queen-rearing and the management of bees at swarming time proved to be a many-sided and very fascinating problem. The scientific bee-masters of Europe, for instance, are still wrangling with the subject of parthenogenesis, while the American beekeeper is largely interested in what he can get out of a hive in the way of a honey crop.

Experimenting with many new inventions I found that the most simple appliances give the best results. When foulbrood, that dreaded bee-disease appeared in my yard I was startled. At a beekeepers' convention I interviewed a veteran on the subject. He spoke consoling and encouraging words. The books and bulletins explained the cause, effect and remedy. I got along fairly well with the so-called McEvoy method of shaking all the bees onto starters. But I succeeded best by my own more radical cure of consigning the whole infected lot to the furnace. For a time the question of hives also preyed upon my mind. All beginners, it seems, are affected that way. Not that I felt called upon to invent something new, it was merely lack of confidence in the style of hive I had adopted. The doctors did not agree on the subject at that time, nor do they now. I selected the 10-frame hive which is now becoming standard.

The question of comb or extracted honey production was decided in favor of the latter because it was a surer and therefore more profitable crop in my locality.

Today I am down South preaching as before. But my two boys who learned with me as they grew older remain on the farm in that remote town looking after the 85 colonies that make up the present apiary. In the summer I plan to go back to the old homestead to spend sometime among the bees. Their ceaseless hum and industry never fail to freshen and inspire me to new endeavors. At swarming-time, it seems, there is more "going on" within the 200 square yards that encompass the apiary than in 20 city blocks. It certainly is nature's own moving picture show.

Cambridge, Md.

American Bee Journal

# CONVENTION PROCEEDINGS

**Tennessee Field Meet.**—We are in receipt of a letter stating that Mr. J. M. Buchanan and Mr. W. E. Drane are endeavoring to arrange for a field meeting of Tennessee beekeepers some time next summer. We are promised an announcement for our columns when arrangements are completed. In the meantime beekeepers who are interested in organizing for cooperation in selling, or who will be interested in making an exhibit at the 1916 Tri-State Fair are requested to write to Mr. W. E. Drane, 47 Union Ave., Memphis, Tenn.

**Massachusetts Meeting.**—The Eastern Massachusetts Society of Beekeepers will hold their January meeting on the 8th at 3 p.m., in Room 15, Old South Building, Boston. The regular speaker of the day, Mr. Allen Latham, of Norwichtown, Conn., will speak on "Building Up Nuclei into Full Colonies." In addition, the American Bee Journal will send Mr. Frank C. Pellett, of Iowa, who will also address us at this meeting, and also the Worcester County Beekeepers' Association at their regular meeting at Worcester on the same day at 8 p.m. BENJAMIN P. SANDS,
*Secretary.*

**New York State Convention.**—The beekeepers of New York State at the Syracuse convention have appointed a publicity committee which is to offer premiums of $15, $10, and several of $5, for sketches, snappy, comical, captivating, on the subject of honey, to be used on postal cards, with illustrations showing some feature of honey production. The beekeepers of course are expected to assist in the distribution. Candidates for this competition should write Mr. F. Greiner, Naples, N. Y. Let the good work go on.

**Iowa Convention.**—The 4th annual meeting of the Iowa State Beekeepers' Association was held at Des Moines Dec. 14 and 15. The meeting was well attended and the members enthusiastic. The illustrated lectures at the evening sessions were especially enjoyed. Monday evening Dr. Phillips talked on "Beekeepers of the United States," and his pictures showed many familiar faces from various States, as well as those not so well known from Hawaii and Porto Rico. Tuesday evening Prof. L. A. Kenoyer, of Ames, talked on "Insects and Flower Pollination," dealing more especially with plants of economic importance. By means of a large number of slides he made clear the different ways in which plants of many kinds are fertilized and the importance of the honeybee for this purpose.

The question box was conducted along new lines. This feature was advertised long in advance and the questions sent in were assigned to members before the meeting so that there might be ample time for preparation. Unfortunately those who sent in questions were in few cases present to hear the answers.

Strong resolutions were adopted endorsing the work in bee-culture at the Agricultural College and the work of the State bee inspector. The discussions that followed the various papers were animated and interesting.

Secretary S. W. Snyder was presented with an easy chair in token of appreciation of his services to the association. Officers elected for the ensuing year are as follows:

President, C. E. Bartholomew, Ames; Vice-president, B. T. Bleasdale, Des Moines; Secretary, Hamlin B. Miller, Marshalltown. Directors, W. S. Pangburn, Center Junction; J. H. Schlenker, Ankeny; J. I. Danielson, Fairfield.

**Idaho-Oregon Honey Producers' Association.**—The Idaho-Oregon Honey Producers' Association held their annual meeting at Ontario, Oreg., Dec. 7 and 8. The manager, P. S. Farrell, made his report, showing the association to be in good financial condition with nearly all the honey crop of the members sold at satisfactory prices. The following were elected directors for the ensuing year:

J. F. Weaver, Ontario District; C. W. Nelson, Vale; H. M. West, Parma; P. R. Randall, Nampa; J. M. Stark, Middleton; Homer Cheney, New Plymouth; C. E. Dibble, Payette.

The directors organized and elected C. E. Dibble as president of the asso-

PROF. C. E. BARTHOLOMEW, PRESIDENT IOWA BEEKEEPERS' ASSOCIATION

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ciation with J. M. Stark as vice-president, and P. S. Farrell, as secretary and manager. The association adopted the grading rules of The Colorado Honey Producers' Association; also voted to make the single tier glass front shipping-case the standard for the association.

Wm. McKibben, of Star, Idaho, gave a very interesting account of his experience with American foulbrood.

Mrs. Homer Cheney, of New Plymouth, spoke enthusiastically of the use of honey in cooking.

Mr. J. M. Stark told how he got a crop of comb honey from diseased colonies by shaking early in the spring, then feeding to build them up by the time the honey flow is on.

Mr. H. M. West gave his experience in queen-rearing the past season. He said he had the best success by making his colonies strong, then dividing the brood-nest with queen-excluding zinc and placing grafted cell-cups in the queenless side. By this method he seldom fails to get a nice batch of cells, and the queens produced are large and vigorous.

Mr. C. W. Nelson, of Vale, Oreg., told how he produces section honey without the use of separators. He puts shallow supers of extracting combs on his colonies to catch the early honey flow, thus preventing the brood-nest from becoming congested. As soon as the main flow starts he raises these up and puts on a super of sections, using 28 7-to-the-foot sections with about four-fifths depth starters. Having a strong force of young bees, work is started at once in the entire super, and the result is practically uniform sections. By this method he could secure 28 full weight sections, 90 percent of which would be marketable in less time and with less work and expense than he could secure 24 sections with separators.

The meeting then adjourned, all expressing themselves as well repaid for attending. There were present about 40 members of the association, also a number of non-members who took an active part in the discussions.

W. B. Moore.

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**Meeting at Massachusetts Agricultural College.**—The Massachusetts Agricultural College invites all beekeepers to meet with the students in beekeeping of the Winter School of this Institution on Jan. 10, 1916, at 2 p.m., Entomology Building. Mr. Frank C. Pellett, Inspector of Apiaries for Iowa, will deliver an address.

After the address there will be informal discussions. The Beekeeping Department also will be open to visitors, and is prepared to show new features of current interest.

Burton N. Gates,
*Associate Professor of Beekeeping.*

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**Montana State Beekeepers' Convention.**—The Montana State Beekeepers' Association will hold its annual convention at Billings Jan. 20, 21 and 22, 1916, in the basement of the Parmly Billings Library. All meetings will begin promptly at 9 a.m. and 2 p.m. respectively. An interesting and instructive program will be carried out. All beekeepers of the State, whether members of the association or not, are invited to attend the convention and take part in the discussion and the question box. One session will be held in conjunction with the Montana State Horticulturists Association at which topics of mutual interest will be discussed.

Rates of one and one-third fares will apply if a railway receipt or certificate is asked for when purchasing a single ticket from your local agent and presenting same to the association secretary upon your arrival at the convention. Percy F. Kolb, *Sec.-Treas.*

Billings, Mont., Dec. 16.

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**Ontario Association.**—This convention was held at Toronto Nov. 23 to 25, 1915. There were nearly 200 beekeepers in attendance, and the interest was keen from first to last. Nearly 100 persons stayed to the afternoon session on the third day until the meeting had to break up at 4:45 p.m., to allow a number to take 5:00 o'clock trains.

President Byer drew attention to the heavy winter loss of 1914–15, attributing it to inferior stores and the poor breeding season of the fall of 1914. He stated that the honey crop had been good west of Toronto, but rather light from that point east. The local demand for honey has been exceptionally good, and generally speaking the prices recommended by the Crop Report Committee have been received.

The secretary-Treasurer reported a membership of 1130, and a balance on hand of $233.92. A larger number of members than ever had taken advantage of the opportunity to purchase pure-bred queens cooperatively through the association. Sixty local apiary demonstrations had been held during the year with an average attendance of 32. This, in view of the rainy season, was considered very good.

Instructive addresses were given by Dr. E. F. Phillips, of Washington, D. C., on "Temperature and Humidity in the Hive in Winter," and on "Outdoor Wintering." F. W. L. Sladen, of the Central Experimental Farm, Ottawa, gave a report on investigations of "Honey Production from the Goldenrods and Asters;" and Prof. L. Caesar, Provincial Entomologist, read a paper on "Poison Sprays and Poison Baits and their Relation to Bees."

Officers elected for the ensuing year were: President, F. W. Krouse, Guelph; 1st Vice-President, James Armstrong, Selkirk; 2d Vice-President, W. W. Webster, Little Britain; Secretary-Treasurer, Morley Pettit, Guelph.

Three rather important resolutions were passed as follows:

1. To have the Executive Committee with D'Arcy Scott, of Ottawa, and Mr. J. D. Evans, of Islington, petition the Dominion Government to take measures to prevent the importation of bees from diseased districts.

2. That Messrs. J. D. Evans, N. M. McIntyre and R. B. Ross be a committee to request the Ontario Government to increase the fine in the present act against spraying fruit trees in full bloom, to be not less than $25, and not more than $100.

3. That the Provincial Apiarist be requested to conduct experiments to prove the effect upon bees of exposing sweetened poisons for the destruction of grasshoppers, army worms, etc.

Morley Pettit, *Sec-Treas.*

Guelph, Ont., Dec. 1.

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HOME OF W. D. CRAIG, HINDSBORO, ILL.

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**Winter School in Beekeeping.**—The Massachusetts Agricultural College announces its annual Winter School for Beekeepers, which lasts ten weeks, commencing Jan. 3, 1916, and closing March 10. This is one of 28 short courses carried on simultaneously. It is possible for the students to arrange their work so as to secure several of the 28 courses offered.

The beekeeping course deals with fundamental and practical apiculture, its relations to horticulture, that is the growing of field and market garden crops, greenhouse vegetable production, cranberry culture and fruit raising. The following subjects, among others, will be included: Natural history and behavior of bees; races of bees; handling and manipulation; queens and their importance; wintering; spring manipulation and kindred topics; comb and extracted honey-production; care of apicultural products; diseases of bees and their treatment; with a discussion of the tools

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and implements of beekeeping.

This course is usually largely attended. This college is particularly well equipped both for the intensive and smaller beekeeper.

The course comprises two lectures and one laboratory period weekly, with certain periods devoted to special topics and specially arranged for. Those interested in enrolling should address the Extension Service, Massachusetts Agricultural College, Amherst, at an early date, requesting an application blank. Full printed information is available. The course is in charge of the writer, assisted by Mr. John L. Byard.

BEEKEEPERS' CONVENTION.

A convention is usually held annually. The 1916 convention is not yet fully planned. A special announcement will appear in this paper later. The date, however, is determined for March 14-16 inclusive. This forms the conclusion of the Winter School in Beekeeping. A number of prominent authorities will appear upon the program. Set aside these dates and await details.

TWO OTHER COURSES.

The Spring Beekeeping School, May 31 to June 14, 1916, inclusive, is an intensive school for practical beekeepers. An especially attractive course is offered this year. This school is held at Amherst once in three years. A special announcement will appear in this paper shortly.

During the annual Summer School, a course in beekeeping will be given beginning about the middle of July. This course is designed primarily for teachers and such others as are not able to attend the more intensive course. Announcement will be issued in the spring. BURTON N. GATES.

Amherst, Mass.

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**National to Meet in Chicago.**—We have just received word that the next convention of the National Beekeepers' Association will be held at Chicago Feb. 22, 23 and 24, 1916. Four of the five directors voted for Chicago as the place of meeting.

PAPERS AND ADDRESSES PROMISED.

"Use and Misuse of Prime Swarms"—Grant Anderson, San Benito, Tex.
"Advertising and Selling Ripe Honey"—R. M. Spencer, Ventura, Calif.
"Beekeeping in Utah"—M. A Gill, Byrum, Utah.
"Teaching Value of Honey in our Public Schools"—Geo. W. Williams, Redkey, Ind.
"Insuring Honest Values to Queen Buyers"—Kennith Hawkins, Plainfield, Ill.
"Extending the Use of Honey in Cooking"—E. H. Bruner, Chicago, Ill.
"Possibilities and Limitations of Inspection"—Frank C. Pellett, Atlantic, Iowa.
"Establishing a Trade Name"—E. R. Root, Medina, Ohio.
"Some Beekeepers of Canada and their Apiaries" (with stereopticon slides)—Morley Pettit, Guelph, Ont.
"Importance of Bees in Pollinating Economic Plants"—L. H Pammel, Ames, Iowa.
"Outapiaries"—C. P. Dadant, Hamilton, Ill.
"The Depressed Honey Market"—J. E. Pleasants, Orange, Calif.
"Beekeeping Improvement Through Agricultural School Work"—Francis Jager, St. Paul, Minn.
Papers (subject later)—Grover Matthews, Filer, Idado; J. H. Stoneman, Blackfoot, Idaho; D. C. Polhemus, Lamar, Colo.

**Illinois Meeting of Nov. 29-30.**—This was one of the best meetings the Illinois association ever held, although the number in attendance was not great, about 30. There was no time lost, and the four sessions were full of interesting discussions after the reading of each address. One of the many features was the paper read by Dr. Phillips, of the United States Bureau of Entomology. Other addresses were read as announced, but the members were disappointed in the failure of both E. R. Root and N. E. France to be present.

Several important steps were taken, which must help the progress of beekeeping in Illinois. A resolution was sent to the General Assembly, urging the continuation of the appropriation for inspection, as the report of the inspector showed a fair progress in the extinction of foulbrood. This progress appears mainly in the educating of the farmer-beekeepers upon the diseases of bees through the visits of the inspector or his deputies. The need of compulsion in eradicating disease, which was dreaded by many, has proven unnecessary, owing to the common sense and willingness shown by the average beekeeper in treating diseased colonies.

Another resolution was passed unanimously, asking the State board of Agriculture to erect a building for the separate use of the Bee and Honey Show. The example which has been set by States like Minnesota is worthy of imitation. The Illinois bee and honey exhibit has been kept in narrow limits by lack of inducement. A special building containing a separate room for the demonstration of honey extraction and other manipulations will enhance the growth of bee-culture and increase the demand for honey on the part of the uninformed public. Too many consumers are still in ignorance of the methods of production of extracted honey, and have a prejudice against it. This may be easily overcome by demonstrations before the public.

At the urgent request of Geo. W. Williams, secretary of the Indiana association, a resolution was passed creating a special committee to request the superintendents of public schools to give honey proper credit in the teaching of domestic science. Just what may be achieved by this committee remains to be determined, but the step is in the line of progress.

The beekeepers of Illinois should attend this annual convention by the hundred instead of by the score, if they wish to help increase the consumption of honey.

## MISCELLANEOUS NEWS ITEMS

**The Werner Fund.**—We are sending to Mr. Werner the subscriptions for relief which have come to us. Amount previously acknowledged $34.13.

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|---|---|
| R. H. Schmidt, Sheboygan, Wis. | $2.00 |
| A. Mottaz, Utica, Ill. | 2.00 |
| G. W. Bercaw, Glendale, Calif. | 1.00 |
| Geo. S. Wheeler, New Ipswich, N. H. | 2.00 |
| Irving Long, Marceline, Mo. | 2.00 |

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**Golden Wedding.**—Mr. and Mrs. E. Whitcomb, of Friend, Neb., celebrated their Golden Wedding anniversary on Dec. 10 last.

Mr. Whitcomb is a veteran of the Civil War, who began keeping bees in the sixties. He has been an extensive beekeeper and was superintendent of the bee-exhibit at the Nebraska State Fair for over 30 years. He put up and managed the Nebraska exhibit at the Columbian Fair, in 1893, had charge of the bee-industries at the Omaha International Fair in 1898, where was displayed one of the most extensive bee and honey exhibits. He was for many years president of the Nebraska Beekeepers' Association and is therefore a national and familiar figure.

Our good wishes go to the *young* couple. May their happy days continue!

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**Campanilla Honey.**—We have before our eyes a 12-page pamphlet, neatly gotten up, illustrated with 17 half-tones, with the title "Campanilla." It is issued by an enterprising American, D. W. Millar, already known to our readers. His home is in Holguin, Cuba, and he is making a deserving endeavor to raise the value of good Cuban honey, by describing the production of honey in the modern way. We wish him success.

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**Revised Edition of Beekeepers' Library.**—The revised edition of "The Beekeepers' Library" has recently been issued by the State Apiarist of Iowa. The former edition was entirely ex-

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hausted. The new bulletin is revised and brought up to date and contains a list of the available bulletins relating to beekeeping issued by the government and by several different States.

Almost all the bee-books now on the market are described so that the reader can decide for himself which will best meet his needs. The bulletin will be sent free to Iowa beekeepers who write to the State Inspector, Frank C. Pellett, Atlantic, Iowa, and ask for Bulletin No. 4.

**Death of Mrs. Emerson T. Abbott.**—A letter received in St. Joseph from Emerson T. Abbott, who for many years was a resident of St. Joseph, Mo., contains the information that his wife died in a hospital at Jackson, Miss., Oct. 8. Mr. Abbott's home is at McHenry, Miss. He writes that his own health is very poor, and that he fears he will never see St. Joseph again.

Emerson T. Abbott was interested in bee-culture here and published a paper called The Modern Farmer and Busy Bee for a number of years. With his wife he moved to Mississippi ten years ago.—*St. Joseph News-Press.*

Mr. Abbott was at one time one of the directors of the National, and well-known among the leading apiarists of the central West. We extend to him our sympathy.

**Ontario Experiments.**—The Ontario Experimental Union report, published by the Ontario Department of Agriculture shows a number of experiments carried on by 541 beekeepers. Although, owing to a poor crop in 1914, the experiments were not so conclusive as they might have been, still the Provincial apiarist in charge, Mr. Morley Pettit, is to be congratulated on getting so many beekeepers to become interested in these experiments, for nothing is better to induce a man to take care of his industry than comparative tests of different methods. Those who have undertaken those experiments will undoubtedly become better beekeepers as they continue their work.

**The Apple.**—This is the title of a finely executed and well illustrated book of 492 pages, by Albert E. Wilkinson, published by Ginn & Co. ($2.00). It would be outside of the scope of the American Bee Journal, were it not for two or three paragraphs, of importance to us because they relate to bees and their connection with pomology. We read on page 221:

"It is an old story that orchards should not be sprayed with any arsenical spray during their bloom, both for fear of killing the bees that pollinate them and of fear the spray will itself injure the stigmas or pollen. Recent investigation, however, seems to show that spraying an apple tree in bloom does not do so much damage to bees visiting the tree as had been supposed; though there is still room for further test experiments. But, on the other hand, it is now thoroughly established by experience (and it conforms to common sense, too), that there is a great and ruinous danger to bees from spraying an apple orchard at a time when a cover crop of clover under the trees is in bloom, whether the trees are in bloom or not. Of course, the spray falls down into the clover, and clover blossoms have just the right funnel arrangement to concentrate the poison. In considerable parts of Colorado the beekeepers have had to move their bees away from the neighborhood of orchards, far enough to be beyond a bee's ordinary flight; those who stayed by the orchards have lost almost all their stock of bees, and this was not on account of spraying while in bloom (which is now prohibited by law in Colorado), but on account of spraying when the clover under the trees was in bloom.

"The spraying appears to kill not only the bees that visit the flowers but also the larval bees in the hive, to which the poisoned honey is carried back. One might easily stir up a scare about danger to human beings who might eventually eat honey from that hive, but doubtless the bees die off too fast to lay up a store that would hurt human beings much.

"A suggestion has been made that whenever the spray is poisonous to bees it should be mixed with enough tobacco tea so that the odor will keep the bees away from the sprayed area until the poisoned blossoms have had time to wilt."

On page 417, in explaining pollination, he writes:

"The pollen of one variety is carried to the blossoms of another in two natural ways—by the wind and by insects. There are many kinds of insects, such as bees, wasps, and flies, which aid in the cross-pollination of orchard fruits, and of these the wild bees of several species are probably the most important. But few of the wild bees can live in a large orchard, especially if it is well tilled; therefore, as the extent and thoroughness of cultivation increases, the number of these natural aids to cross-pollination decreases and it becomes necessary to keep domestic honeybees for this purpose.

"Every large orchard where the trees are numbered by the thousands should have near by a bee-yard of at least 50 swarms to help in thoroughly pollinating the blossoms and obtaining the best results. Bees will not be poisoned by the spraying of fruit trees with poisoned substances if the work is done at the right time, which is just after the blossoms fall. No sensible orchardist will spray his trees when in full bloom, and thus poison one of his best friends, the bees."

This testimonial is of value, being in the same line as the representations of practical beekeepers against spraying fruit trees in bloom. Our own experience, and that of most of our friends, is that the greatest danger is in the bee sipping poisonous nectar from a fruit blossom. At that time the clover is rarely advanced enough to be much sought by the honey gatherers. But every statement made by this author in this connection is of value to the beekeeper in helping him to convince the orchardist. For that reason, and because this work is up-to-date and practical, we believe it should be recommended. It may be secured at this office.

**Bee Moths.**—Empty combs kept over winter in a place where the thermometer goes down to zero will be entirely free of moths or moth eggs in spring. In our northern and middle States bee-moths can winter only in a living colony of bees or a warm house.

APIARY OF W. D. CRAIG, HINDSBORO, ILL.

EAT HONEY
NATURE'S OWN SWEET—AIDS DIGESTION

American Bee Journal

# BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

## DEATH

[The following lines, by Grace Allen, the beekeepers' poetess, are so beautiful that the sisters will be glad to read them, even though some of them may already have read them in Gleanings in Bee Culture, from which they were taken.]

So many things I do not understand!
My neighbor's house today is strangely still,
Insufferably sweet with heaped-up flowers.
Friends enter softly, greeting hand to hand;
A silence never-ending seems to fill
With shadowed hush the long, reluctant hours.

(Though once across the aching air so tense,
Insistent in his love and ignorance,
A baby broke the breaking hearts again
With quivered "When she tummin' back? Oh, when?")

Beneath a cloud-veiled sky and shaken trees
My slow steps brought me home, and all around
The withered leaves lay dead on every hand.
I stood at last among my quiet bees,
Stood there and stood, nor made the slightest sound—
So many things I do not understand!

## A Honey-Box

In a Chicago daily—like enough in several of them—in a full-page advertisement of Marshall Field & Co., offering appropriate articles for Christmas presents, appears the following:

"Honey-boxes, in great variety of patterns. A practical novelty, $2.00 to $6.50 each."

The likelihood is that beekeeping women who read that advertisement will not be very favorably impressed. Something like this may be said: "That's no honey-box; it's a honey-dish. The idea of paying six dollars for a dish with a cover to hide the beauty of a snow-white section of honey! Why, such a section is one of the finest adornments of a table. I'd rather have a section of honey on a 25-cent plate, with all its beauty fully displayed, than to have it hidden by the most expensive pottery."

All the same that advertisement is a thing to rejoice over. Not every table of the well-to-do has honey on it, either in a 25-cent dish or a six-dollar one. To those who do not consider honey as a thing necessary for a well appointed table the advertisement will be suggestive. The thought will be: "If a house like Marshall Field's, that knows what's what in table decoration, thinks it worth while to advertise honey-boxes, I've just got to have one." Then, of course, honey must be had for the "box," and whether or not it be discovered that the honey itself is more beautiful than the dish, honey on the table will become the proper thing. Then when honey on the table has become fashionable, trust it to hold its own by its intrinsic merits as a thing of beauty and the finest of all sweets.

## Now for Winter Quarters

For those who winter bees in cellar, not many things are cause for so much anxious thought as the matter of deciding when to take the bees into the cellar. Theoretically it's easy; take them in the next day after their last flight in the fall, no matter whether that be early in November or late in December. For sometimes it happens that there will be no day warm enough for flight from the first week in November until spring, while again it may happen that a warm day comes near Christmas. But who can tell, when a warm day comes the first week in November, or indeed at any other time, whether a flight-day will come later or not? And that's where the anxiety comes in.

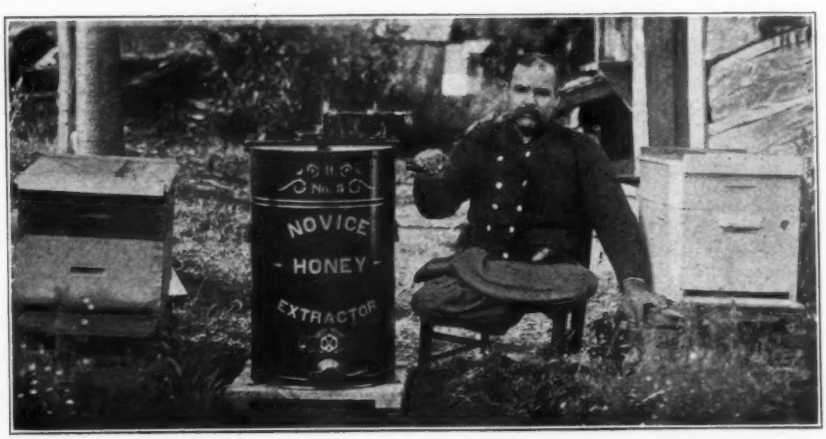
This year we had unusually beautiful fall weather in October and up to about Nov. 10. Then it continued good fall weather, but still too cold for the bees to fly. Then the question arose, becoming a little more insisting each day: "What about taking the bees in?" The fact that we had had such a long spell of pleasant weather made it rather natural to think that when cold weather did set in it might be for good, and yet it is not often that the bees have no chance to fly after Nov. 10. At any rate, we took the chance of waiting for another flight. Another ten days of November came and went, yet no further chance for a flight. Then the question came: "Is it better to wait still further, or take them in now? They have had ten days confinement since they flew, and each day during that time their intestines have been getting more and more loaded, making them more and more unfitted for the long confinement that awaits them. If they are not to have another flight—and quite often they have no chance for flight after Nov. 20—then the sooner they come in the better. But if they are not to fly again until spring, and we keep waiting and hoping until late in December, then they will be taken in very unfitted to stand further confinement, for each day they stay out they are consuming perhaps ten times as much as they would in the cellar, so one day of outdoors is as bad as ten in the cellar, *if* there is to be no subsequent flying." Oh, those tenterhooks upon which those *ifs* can hang a body!

When Thanksgiving day, Nov. 25, came, among the thousand other things for which we were thankful, the flight of the bees was not the least, for on that day they flew. How glad we were. We could then congratulate ourselves that we had not taken them in Nov. 10, for that would have given them two weeks longer confinement. Yet it is a bit doubtful whether we did the wisest thing, for it was taking too much risk. That two weeks in confinement in the cellar would not have been so very hard on the bees, whereas if no day for a fly had come the two weeks confinement outdoors would have been a very serious thing, and there's no telling just when they would have been taken in if no warm day had come.

### TAKING THE BEES IN.

For a day or so after their flight it was a bit warm for them to be in best condition to be taken in, and then there was delay in getting Philo, the man that has taken the bees in for a number of years, so they were not taken in until Dec. 4. Fortunately the weather was rather mild during this delay, but on Saturday morning, when they were taken in, it was freezing cold, bright and still, an ideal morning for taking in. Philo had Warren Smith to help him, and the carrying in was the simplest possible. A hive was picked up, carried in the arms, and set down in its place in the cellar, and that was all there was of it. The carrying in the arms was made easy by the fact that instead of depending on the usual hand-holes or even short cleats that dovetailed hives have our hives have ⅞-inch cleats at each end running the full width of the hive.

The men needed neither gloves nor




JESSE C. COCKRAM, A CRIPPLE UNABLE TO WALK, BUT AN ARDENT BEEKEEPER

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veils, for the bees did not wake up till some time after they were in the cellar. The precaution had been taken, however, to crack the hives loose from the stands the evening before, by raising them up. If this had not been done, the jar given when a hive frozen to its stand was lifted would have wakened the bees before the cellar was reached, and then there would have been trouble. But the hives were lifted and carried so quietly that the bees didn't realize what was going on. Each man took hold of a cleat in each hand, raised the hive, set it on his knee, then put an arm under each cleat, letting his fingers reach around the farther side of the hive, and with the hive thus tightly hugged against his breast went on his way. That's one advantage of the 8-frame hive, an advantage not to be despised, that it is so light that it can be picked up and carried thus quietly by one man without any ceremony. But that advantage is more than an offset by the uncomfortable feeling that a larger hive would be so much safer against running short of stores.

## Honey Recipes

CAKE WITHOUT SUGAR.

Sugar, too, seems an almost indispensable ingredient of cake; yet with thick honey on hand, a delicious cake may be evolved. Cream until very light half a cupful of butter, and add, a little at a time, 1⅔ of a cupful of thick honey. Have two eggs beaten lightly, add these to the butter and honey with one teaspoonful of caraway seeds (these, of course, may be omitted) and two teaspoonfuls of baking powder sifted with two cupfuls of flour. Beat the batter well, turn into a ring mold that has been well greased and dredged with flour and bake about 35 minutes. Ice when cold with a lemon frosting.

VIRGINIA HONEY MUFFINS.

Beat one egg well and mix in half cupful of milk, 1½ tablespoonfuls of melted butter, ¼ cupful of honey, 1½ cupfuls of flour sifted together with 2 level teaspoonfuls of baking powder. Bake in buttered muffin tins for 20 minutes.

HONEY FLUFF.

Three cupfuls of granulated sugar, ½ cupful of strained honey, ½ cupful of water, one teaspoonful of lemon extract, and whites of 2 eggs.

Boil together until the mixture hardens in cold water, then pour it slowly over the well-beaten whites of two eggs. Flavor and beat together until stiff enough to drop on buttered paper. One cupful of chopped nut-meats may be added.—*Good Housekeeping.*

# DR. MILLER'S ANSWERS

**Send Questions either to the office of the American Bee Journal or direct to DR. C. C. MILLER, MARENGO, ILL.**
**He does NOT answer bee-keeping questions by mail.**

### To Correspondents

I have a letter containing some questions about bees, with this for a postscript: "I wrote to you last month, but you did not answer. I have been taking the American Bee Journal for about three years." I make it my business to answer every letter that comes in time so the answers can appear in the next issue. But some do not realize that it takes considerable time to write answers, mail them, have them put in type, print, bind, and mail the journal. So if a letter comes from a considerable distance, and is not started until the middle of the month, it may happen to be too late to appear in the first following issue. In some cases, too, it makes a difference whether the letter is directed to the American Bee Journal at Hamilton, or directly to me at Marengo, Ill. So it is the better plan always to send questions directly to me. In the present case I remember answering the same questions, so of course it would not be wise to repeat the answers.

Some prefer that their names shall not appear with their questions, and so do not sign their letters with their names, but only with the name of their post-office or State. In no case is the writer's name printed unless a particular request to that effect be made. But on more than one account it is desirable to have the proper signature; so please sign your name always, and you may be sure it will not be printed. And whatever you do, don't ask answers by mail. C. C. Miller.

### Spoiled Zinc

I have about 200 perforated zincs being eaten up by some white substance that forms on them.

1. Could you tell me what is the cause of it?
2. What should a person do to prevent it?

ILLINOIS.

[Dr. Miller being unable to answer the above questions, the matter was submitted to an expert in metals, who replies:]

ANSWERS.—1. The white formation on the zinc in question is caused either by contact with something of a corrosive nature, such as an acidulous liquid or substance, or it may be the result simply of exposure to air, and particularly to damp air.

2. To prevent it, paint the zinc with boiled linseed oil, which, while it will dry slowly, will make a permanent, durable coating which will protect the zinc from the effects of exposure, etc.

The corrosion may be removed by using a stiff wire hand-brush, such as may be bought of jewelers' supply houses.

### Treating Bees for American Foulbrood

I see that you gave combs of honey to two colonies this fall. I tried the same thing two years ago, but it did not prove a success with me. Both colonies built up very rapidly in the spring, but American foulbrood appeared in a few cells in the middle of summer and I tried the regular plan with success. I am anxious to know how you succeed.

Another colony showed a few cells. I fed it, as well as others that might be affected, syrup with salicylic acid and carbolic acid. The disease disappeared in this one, but later it swarmed twice, which left it very weak. Later I found three cells of diseased brood. They built up rapidly, and when the young queen filled the hive with brood, I could find no trace of disease.

IOWA.

ANSWER.—You gave frames of sealed honey in the fall, and a few cells of American foulbrood appeared in the middle of the next summer. That is hardly conclusive proof against that plan of treatment, for the disease might have come from outside. At any rate failure in a few cases should not entirely overcome the testimony of success in so many other cases.

You removed the only frame in which you found the disease, and it did not reappear. That would likely work in some cases, and fail in others.

Across the water no small dependence is placed upon feeding medicated syrup, but in this country it is generally agreed that it is useless. Whatever may be the case with European foulbrood, for American foulbrood the only safe thing seems to be to shake, unless it be that it is just as well to give sealed combs in fall. In either case there must be the destruction of the diseased combs.

### When to Treat European Foulbrood?

1. Late this fall several cases of European foulbrood have developed. I first doubled them up and shook one of them. Now a week or so ago I went into them again and found (in two of them) no trace of foulbrood. The shook swarms are also all right. Now these swarms are liable to break out again in the spring. What is the earliest time that you would advise to treat them? Would you advise the 10-day method with requeening?

2. If I put a queenless swarm on full sheets of worker foundation, or if they lose their queen soon after I hive them, will they build any more drone-cells than they would if they had a queen? Of course, if they had only starters they would. IOWA.

ANSWERS.—1. In most cases I should hardly expect a recurrence of the disease. In any mild case of European foulbrood, if the queen were a good one that I wanted to keep, I should cage her for 10 days in the hive and then free her. If the queen were poor, or if I could give a better one, I would kill the queen and at the same time introduce a virgin just emerged, or else introduce a laying queen 10 days after the killing. In a severe case I should kill the queen and proceed as just mentioned. Operate as soon as convenient after bees have gotten nicely to work in spring.

2. If you have a queenless swarm, it is not likely that it will build at all, but will return to the mother colony. A swarm will also return if it should lose its queen within two or three days after being hived, or even longer than that. But if it should lose its queen at any time too late to return to the old hive, you would be pretty sure to find a let-up in comb-building, with drone-comb put in wherever there might be any place not entirely filled with worker-foundation. Some have even reported the worker-foundation torn down or changed to drone-cells.

### Drones in Worker-Cells

To cure foulbrood I transferred my bees onto new foundation and reared young queens, and two or three of them produced nearly half drones in worker-cells. Of course, they were a great deal smaller than drones reared in drone-cells, and they were not by themselves, but promiscuously mixed in the cells. Who can explain the case? I have kept bees 40 years or more, and never saw anything like it before. I destroyed them and introduced other queens. OHIO.

ANSWER.—Such cases are not common, but they do happen now and then. Generally it is because the queen is old and the supply

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of material in her spermatheca has become nearly exhausted. But your case cannot be accounted for in that way, since the queens were young. Either the fecundation of the queens was imperfect, or there was imperfection in the muscles concerned in performing the act of fertilizing each egg. The remarkable thing is that you should have had more than one young queen of the same kind.

### Pollen in Combs

About four weeks ago I bought 11 colonies of bees in 10-frame hives. I hauled them nine miles. Before packing them for winter I discovered that one colony was dead. They had plenty of stores for winter, but only about a teacupful of bees; their frames contained half honey and half pollen.

I am sending you a sample of the honey and the pollen. I would like to know what is the matter and what to do? They are all in their winter quarters side by side, ten in a row. Some of the other colonies have lots of dead bees outside of the hive. IOWA.

[Sample received at office. It looks normal, merely pollen and honey. No brood.—EDITOR.]

ANSWERS.—There is no evidence of anything wrong in the sample received, which contains only honey and pollen (of course, no brood), quite normal in appearance. It is not a very wild guess to say that the colony was queenless, the bees having gradually died off. In such a case there would be an unusual amount of pollen, because for some time the bees continue to store pollen, and very little is consumed when there is no brood.

There is, of course, nothing to be done in the case of the dead colony, except to save the combs of honey and pollen for next year. A swarm may then be hived upon these combs, or they may be used in spring to help any needy colonies. The dead bees at the other hives are perhaps no more than should be expected.

### Tin Separators

I am enclosing a sample of a cheap grade of tin, and wish to ask if such would be satisfactory for "separators," so far as *rust* is concerned? And, further, what grade do you use? ILLINOIS.

ANSWER.—The sample of tin is all right. The cheapest grade will do for separators, there being no trouble from rust. I don't use any grade of tin; I use wood. For years I did use tin—the cheapest grade—but for a good many years I have used wood. Tin was better when I used tin, and wood is better since I have used wood. All depends upon whether the separators are loose or not. At first I used wide frames with the separators nailed onto the frames. The nailing was necessary to keep the separators taut and in place. But if wood had been used, there would have been at least a little tendency to swelling and shrinking, make the separators curl a little, whereas there can be no shrinking and swelling of tin. Since using T-supers the separators are of wood, and loose. The grain of the wood keeps it straight lengthwise, and being loose there is no chance for curling no matter if there is a little shrinking and swelling. If tin were used loose, there would be some tendency to waviness lengthwise.

### Bees in Cellar

December 1, I put 30 colonies of bees in my house cellar, which is 14x18 feet, sand sides and bottom. The hives are piled up on benches two feet from the floor. I left the cealed covers on and bottoms also. I gave them ⅞-inch entrance the full width of the hives, and the bees seem to be more uneasy than they do with ⅜-inch entrance; the hives have no vent above. The thermometer inside the hive and outside the cluster on the bottom board registers 48 degrees. The thermometer stands around 44 and 46 degrees in the cellar. The bees seem to be more quiet with the ⅜-inch entrance than they do with the ⅞ inch. The cellar seems to be quite dry. I have a ventilator from the outside, 14x30 inches, with two thicknesses of burlap over it. It is open all the time, and I can open the door in warm weather to give more fresh air if needed. Do you think I had better raise the covers and put a piece of section under?

Last year I put two colonies in this cellar one just like I have them now and the other I took the cover off and put two thicknesses of carpet over the hive. I could see no difference in the two in the spring. They were both quiet when I took them out. Some of those colonies in the cellar are real quiet and others are very restless and uneasy. Of course, there are more colonies in the cellar this winter. I have them piled two and three colonies high. I darken the end of the cellar where the bees are with burlap. They all seem to be dry in the hives so far. Do you think to change the hives and pry the covers up would do much harm by disturbing the bees. What is your advice? MICHIGAN.

ANSWER.—I believe I would leave everything just as it is. You say the bees having the ⅞-inch entrance don't seem as quiet as those with ⅜. Sometimes, you know, "things are not what they seem." It is just possible that you are mistaken, and that the apparently greater uneasiness is because you can hear more clearly the noise at the larger entrance. If it should be true that the larger entrance is not so good, then you surely would not help matters by raising the covers. But the disturbance of raising the covers would not be a serious matter, and you might try raising at least two or three. You will probably find it will not make much difference.

### Sour Honey

For the first time in my life I have a quantity (about 125 pounds) of extracted honey that is slightly soured, enough to impart a strong taste. Would this honey be safe to feed the bees after the opening of spring? This honey is in a granulated condition, and could be sold on our local market, but I do not think it would be good policy to sell it. INDIANA.

ANSWER.—Yes, after bees fly every day, or even every week, it will be safe to feed such honey to the bees. It would be well to add at least an equal quantity of water, and of course the granules should be melted.

The probability is that the part of the honey that is not granulated is thin, and that this thin part contains all the sourness. In that case lay the vessel on its side and let the thin part drain off slowly, and then after melting the part that is left you may have a fine article. The thin part will make vinegar. But that will not work in all cases, for sometimes the honey is like lard, and the thin part will not drain off. But if it has soured at all, there is pretty surely a thin part that will drain off.

[Honey that ferments may often be improved by heating, which destroys the germs of fermentation, but it is nevertheless inferior honey.—EDITOR.]

### Adding Room—Put-Up Plan

What difference in effect is there when a hive is overflowing with bees before the queen-cells are started? When about to add another full-depth hive-body with comb foundation or both, whether this added hive-body is the upper or under hive-body?

1. When there is nothing between the bodies?

2. When there is an excluder between?

Over a year ago you gave me a modified way of the put-up plan, eliminating the need of clipping or hunting queens. A body was to be set on the old stand with the brood, cover put on, and on that the old hive with queen and empty comb or foundation. How would it affect the result, if a person arranged the hive-bodies just as stated, only on the lower hive put an excluder, and on that the old hive-body with queen directly on without bottom-board? Later the queen was to be put back, but that is the same in either of the procedures as above outlined. PENNSYLVANIA.

ANSWERS.—1. If no excluder is used, with the idea of letting the queen enter the added story, then it seems more desirable to give the added story below, since that will put upon the bees no added burden in the way of keeping additional room warm, while if it is added above, the bees will have to keep both stories warm. Moreover it seems more natural for the bees to extend their brood gradually downward than upward. But if the chief thing is to make as little work for the beekeeper as possible, and the added story is to be removed when supers are given, then giving the added story above will be easier.

If an excluder is used, then the added story can only be used for surplus, and should be given above. Bees will store surplus in a story under an excluder, but when given their choice prefer to store above.

2. Never having tried it, I don't know just what would happen if the brood were left in the lower story with the queen in comparatively empty story over excluder. But I doubt whether the bees would swarm unless, and until, cells were allowed to mature in the queenless story.

### Goldens for Foulbrood

In the American Bee Journal for January, 1915, page 29, under the heading, "Breeding from Prolific Queens," question 4, mention is made of some combs with dead brood in them.

These same combs contained quite a little honey, so one day last spring I set them out near the hives for the bees to clean out. The honey, I later found out, contained American foulbrood germs, so about one month later I found all but two of my colonies rotten with the disease, and I guess the two that didn't take it were too weak to partake in the feast. I then sent a sample of dead brood to E. F. Phillips, of Washington, D. C., and he pronounced it American foulbrood. Along with his answer came a bulletin on foulbrood and its cure.

I shook those bees and was very careful to follow directions, giving each colony one shake each. Some failed to stay cured, so I ordered golden Italian queens from Virginia and began to requeen. One of those colonies had a pretty bad case of it about a month after being shaken, but when those golden bees began to hatch they cleaned the dead brood right out, and it has not appeared since.

1. Do you think the disease will reappear in those colonies again next spring or will they remain healthy?

2. If golden Italians are a sure protection against European foulbrood and perhaps American also, isn't it best for me to keep that kind altogether even if they don't produce quite so much honey.

I have a friend that fought American foulbrood the past season, and he is very enthusiastic about the goldens also.

I had a lot of experience with the disease this year, and I feel it was worth many dollars to me, for I have learned things that I might have been years learning. Our honey crop was nearly a failure on account of the disease, but we got enough for our table use besides barrels of fun and a lot of stings and experience.

The thing I regretted the most was the burning of those beautiful combs, and if I ever burn any more it will be after I have given those golden bees a chance.

Father had one colony, spring count, increased to two, and took off 132 pounds of comb honey. Prospects are good for next year.

The bees are on summer stands well packed for winter with plenty of good stores, and if those yellow bees and I can conquer that foulbrood I will think we are on the road to success. ILLINOIS.

ANSWERS.—1. Although you do not give exact dates, I should judge from what you say that after the last treatment there was a considerable time when brood was reared,

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and that it was not diseased. In that case I should hardly expect the disease to reappear next spring, although there is always the possibility that it may reappear by the same door through which it first entered, which was probably from some neighboring apiary.

2. If any particular kind of bees will guarantee you against disease, it will surely be advisable to use that kind, even though it should cut down the harvest considerably. I hardly think, however, it would have that effect, for a colony of bees vigorous enough to combat successfully foulbrood of either sort is likely to be vigorous enough to do good work at storing honey.

But it is assuming altogether too much to assume that "golden Italians are a sure protection against European foulbrood and perhaps American also." I think immunity against either variety of foulbrood has never been claimed for Itailians, and the most that has been claimed is that they are a help in combating the disease, and of the two kinds, the 3-banders are generally counted more efficient than the goldens. To be sure, there is your own testimony as to a bad case being cleaned up when the goldens began to hatch, and on the face of it that looks as if a colony had cleaned up a pretty bad case of American foulbrood without any help. There have been cases reported in which the bees cleaned up cases of European without any help, but I do not remember ever before to have heard of a case of American being so cured; so that the question naturally arises whether by any possibility there may not be some mistake. At any rate, if you are dreaming that you have bees that are proof against foulbrood of either kind while the disease exists in your neighborhood, you are likely to have a rude awakening from your dream.

### Uniting Weak Colonies

I have bought 12 colonies in Danzenbaker hives; two were a little light. I set them on top of two strong ones, united them by Dr. Miller's newspaper plan. How do you think it would do to double them up that way in the spring and make one large colony out of two. Do you think it would make them swarm less and make them gather more honey? INDIANA.

ANSWER.—If a colony is so weak that there is little hope of its building up in time for the harvest, uniting as you mention may be advisable. Otherwise it would hardly be best, as the united colony might not store as much as the two left separate. If there should be any difference as to swarming, it would be that the uniting would increase the tendency in that direction.

### Paralysis—Queenlessness

I have five colonies in movable frame hives. About the first of July they were badly affected with bee paralysis. Large numbers of them died in bad weather, but the disease would check in fair weather. In October they were left with plenty of honey and pollen to winter on, and today, Dec. 13, examined one hive that was very weak in bees. I found no eggs, brood nor queen, but I found two capped queen-cells, also three cells torn open. Will they rear queens during winter months? If so, can they be depended upon as good queens? What do you do with colonies that are found to be queenless during the winter? MISSOURI.

ANSWER.—Answering your last question first, I never find any colonies queenless in winter, for I don't open a hive from the time it is put in cellar until it is taken out again. But if I should by any means find a colony queenless in winter, I would let it alone until bees were flying in spring, when I would unite it with another colony.

It appears certain that bees will rear a queen in winter, since your bees are doing that very thing. But it is hardly likely that drones are present and flying to fertilize a young queen, although it is possible that a queen reared now might be fertilized in spring. On the whole it is doubtful if such a queen reared would be very valuable, and it might be well for you to unite the colony with another. Where you are it is likely warm enough, at least on some days, for you to unite the colony without waiting till spring.

### Wax Rendering

I have some old combs that I wish to render into wax. I have no wax press. Will you kindly tell me how I can do it. MAINE.

ANSWER.—The dripping-pan extractor may suit you. Take an old dripping-pan (of course a new one would do), split open one corner, lay in the pan the pieces of comb put the pan in the oven of your cook-stove, the split end projecting out and a pebble or something of the kind under the other end so as to raise it perhaps an inch. As the heat melts the comb the melted wax will run out of the split corner, and be caught in a vessel that you will set for it. Do not have one layer of comb upon another, for in that case the wax will be held in the little cups, made by the old cocoons. You will not get the wax out clean, but if you reserve the slumgum you may be able to utilize it in the future by sending off what you have accumulated to have it worked up by foundation makers.

## REPORTS AND EXPERIENCES

### A Bountiful Lot of Flowers But Too Much Rain

I received a letter from my brother at home, Gimlet, Ky., stating that there were inquiries concerning the condition of the bees and forage, especially the steel weed. Owing to the enormous rainfall the surplus crop was cut short about one-half this season, while there were a bountiful lot of flowers all through the summer, from April to about Nov. 30. The weather did not permit the bees from gathering as they normally do. Our greatest source of surplus was from persimmons and chestnut, beginning June 5 and lasting two weeks, in which time there was very little rainfall. The fall flow was under normal, still there was so much more honey than the bees will need to carry them through the winter. The weather so far has been quite warm, and bees flying nearly every day, as we winter them outdoors. The bees will consume about twice as much of their winter stores as they usually do, which I am afraid will result in a shortage of food for brood-rearing in the spring. We will most likely have to feed almost all the colonies to get them ready for the honey flow. C. H. WHITT.

Clarkston, Mich., Nov. 16.

### A Good Season

From 63 colonies, spring count, I increased to 82. My crop was 5650 pounds of extracted and 750 pounds of comb honey. I fed 500 pounds of white extracted honey back for winter stores in addition to 1000 pounds of fall honey shifted from extracting frames by the bees. No sugar was used. One colony treated *a la* Demaree, drew out 13 frames of foundation, filled 16 frames for extracting very full; swarmed, kept queenless nine days, and wound up the season by filling 116 sections of comb honey.

Another worked for comb honey *a la* Dr. Miller, produced 216 sections, and finished by being fed not less than 15 cases more. Colonies *a la* Doolittle not a success. I gave it three years' trial. That method I will never use again. I think in a *light* and *intermittent* flow it might be a success. Five other colonies furnished from 30 to 39 Langstroth frames for extracting. WES. L. ROBERTS

Lavalle, Wis

### Reminiscences

I was born and raised near Sycamore, Ill., about 20 miles from Dr. Miller's, and I made him a short visit last year. I never saw so many dandelions in one place as I saw there. I am quite well acquainted with Mr. N. E. France. My friend Mr. Ernest Root is on the move, and impressed me as a man that would not be in one spot very long.

I helped the late W. Z. Hutchinson to don his overcoat when he started from St. Louis, little thinking he would drop out of the bee ranks so soon.

I had a long talk with Mr. O. O. Poppleton some years ago, about a fixed type of Albino bees and a certain breed of chickens, to show how persistent the original blood would continue to crop out even if crossed with other breeds for several crosses. He thought it ought to be written up.

I have been working with bees 40 years next spring except a few months in the summer of 1912, having sold to Mr. F. W. Hall seven yards. He has now nearly 500 colonies in fine shape for winter.

Next spring I will likely start with five yards. My dear wife passed from this life Oct 20, after severe suffering. My daughter Beulah is a great comfort to me now.

Colo, Iowa. D. E. LHOMMEDIEU.

### To Introduce a Queen to a Colony With Laying Workers

Shake all the bees off their combs in front of their hive. Put these combs on some strong colony to take care of and clean up until needed. Give to the colony with laying workers one frame full of unsealed brood and one or two full sheets of foundation. Introduce a queen by the cage method after she begins to lay, give them their combs back, if they are not too full of pollen; if they are, give them other combs, so the queen can get busy. I have used this plan several years. J. F. DIEMER.

Liberty, Mo., Nov. 22.

### Bees Packed for Winter

I have just finished packing my nine colonies of bees for winter in the best shape I ever had them, hives full of bees, and about 40 or 50 pounds of honey. I have them outside, all facing the south, about 6 inches apart, with tight board wind break on north, east and west, lined with tar paper, then packed light with dry hay all around and between. The hives are covered with rubberoid roofing to keep all dry, with absorbents 4 inches deep over the frames to take the moisture, and a tight board door to use in front in case of heavy winds or storms.

I wish the American Bee Journal and all of its readers a glorious Thanksgiving.

H. C. SPRINGER.

McCallsburg, Iowa, Nov. 20.

### A Bit of History

Twenty years ago Mr. Thos. Chantry (now of Price, Utah) and the writer were discussing the possibilities of introducing sweet clover into the Western States. At that time it was not grown in the United States in any quantity, and I believe the value of it as a honey-plant was not at that time appreciated. I may be mistaken a little in regard to other facts.

Mr. Chantry took the task of scattering the seed in waste places in western Iowa and southeastern South Dakota, and I was to boom it in the newspapers and bee-journals. The scattering of the seed had to be done at night, as at that time it was considered a noxious weed by most people.

The United States Department of Agriculture, Farmers' Bulletin No. 485, will explain

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R. A. MORGAN, VERMILLION, S. DAK.

to what extent the plant has grown in favor in the United States during the past 20 years.

I notice on page 338, American Bee Journal for October, 1915, Mr. Wesley Foster is poking a little fun at me (which of course is taken in good part), but needs a little explanation. My statement was this: I will give $25 per acre as rental for white sweet clover that is left to go to seed each year, amount limited to 100 acres within one-half mile of my apiary.

I will say that this offer is still in force, and that I think I can make good with it. I, of course, would not make this offer to supply a greater number of bees than I could manage myself. I believe that it is the best honey-plant known to modern apiculture. I have been in the bee-business since 1870, and have samples of honey put up in 1882. South Dakota leads the world in the quality of honey, and the future prospect for honey in this State is almost unlimited. I did not make South Dakota, but I did help to make beekeeping possible here. The most of my experience was gained in Columbia Co., Wis. I took first prize on honey at the State Fair at Madison, Wis., in 1883, as a young man. I should be pleased to correspond with any one interested in apiculture or anything pertaining to it. R. A. MORGAN.

Vermillion, S. Dak., Oct. 14.

[Reports indicate that sweet clover yields more freely and regularly west of the Mississippi than farther east. The experience of beekeepers along the Missouri river and westward seems to justify a higher regard for sweet clover as a source of nectar than is usually given in the East.—EDITOR.]

### European Foulbrood and Moths Destroy the Keeping of Bees

In 1912, after the colonies became strong, I divided them up, giving untested queens to the queenless parts. Soon after that I became aware that there was something wrong with the brood in many of the hives. Until that time I had never seen foulbrood of either variety. I immediately corresponded with State Inspector Pellett, and he directed me to the Department of Agriculture. They sent me a tin box in which to send them a sample, which I did. In due time I was notified that my bees had European foulbrood. All the treatment I gave them that fall was to double up so that all would be strong, and see that every colony had a young Italian queen.

About mid-summer the deputy inspector called. I drove him over the country a little. We first visited my own apiary where we found disease in only one colony. After that we called on a farmer about one mile southwest of where I live. He had five or six colonies all more or less diseased. The next farmer we visited had 15 to 20 empty hives, but no bees. He said the moths took them.

About two miles farther east we visited a farmer who used to have 15 to 20 colonies. He had two colonies left, both rotten with foulbrood. Going south a mile we called on another farmer who formerly kept about a dozen colonies. He had one left and it was badly diseased. Going east a mile we visited a farmer who had four or five colonies that were free from disease. This was the sixth yard we had visited, and the first where we had not found European foulbrood.

I got practically no honey this year (1914). It has been an off year. I am not worrying about that. I have seen many such years. Neither do I fret about European foulbrood. I have not seen a trace of it this year. But I may expect it any time. Still, at the rate it is doing its work it must soon run out of material. Looking at it in that light I am not sure but it is a blessing in disguise.

Jefferson, Iowa. GEO. M. THOMSON.

[This is another proof that there is no need of becoming despondent over European foulbrood, since it may be easily overcome, with a little energy.]

# Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

## BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

TELL several thousand people what you have for sale with a few words in this department.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

NORTHERN BRED ITALIANS, "Nutmeg" strain. Circular. A. W. Yates,
3 Chapman St., Hartford, Conn.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

PHELPS' Golden Italian Bees are hustlers.

QUEENS FROM THE PENN CO. See our large ad. elsewhere in this Journal.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

PLACE your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens. John W. Pharr,
Berclair, Tex.

QUEENS—Italians exclusively, golden or leather-colored. One select untested, $1.00; 6, $4.25; 12, $8.00. Tested, $1.25. Best breeder $5.00. J. E. Wing,
155 Schiele Ave., San Jose, Calif.

THOSE WISHING to buy queens next season will find it to their advantage to write me for price list or watch ad in this paper.
I. N. Bankston, Box 135, Buffalo, Tex.

MY BRIGHT Italian queens will be ready to ship after April 1st at 60c each. Send for price list. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

FOR SALE—Bright Italian queens at 75 cts. each; $7.50 per dozen or $60 per 100. Ready April 15. Safe arrival and satisfaction guaranteed. W. W. Talley,
Rt. 4, Greenville, Ala.

FOR SALE—Three-banded Italian queens. Nuclei a specialty. My stock will please you, as it has others. Let me book your order for spring delivery. Write for circular and price list. J. L. Leath, Corinth, Miss.

FOR SALE—Bees in 2-lb. pkgs. Build up your weak colonies and make your increase by ordering young bees from the South. Price, per pkg. $1.75. Untested young Italian queens, each, 75c. Bees are free from disease, and safe delivery guaranteed.
Irish & Gressman, Jesup, Ga.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

QUEENS from my honey-gathering stock 3 and 5 band Italians. Bred in separate yards. Queens the rest of the season—one, 75c; six, $4.00; 12, $7.00; 25, $13. Safe arrival and satisfaction guarannteed.
D. E. Brothers, Attalla, Ala.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

EARLY SWARMS OF YOUNG BEES in light screen cage a specialty. One 1-lb. package, colonies. I am booking orders now with 10 percent deposit, balance before shipment. Deliveries start March 15. Safe arrival, prompt service and satisfaction. I guarantee. Circular free. J. E. Wing,
155 Schiele Ave., San Jose, Calif.

## HONEY AND BEESWAX

FOR SALE—Finest white clover extracted honey in 60-pound cans.
Henry Hettel, Marine, Ill.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Light extracted honey, clover and basswood blend, in any style packages. Write for prices. Sample, 10 cents, which may apply on order. M. C. Silsbee,
R. F. D. 3, Cohocton, N. Y.

FOR SALE—Well ripened and mild flavored extracted honey, two 60-pound cans to case, white, 7c; amber, 6c per lb. Amber put up in pails, six 10-lb. or twelve 5-lb. for $6.00. Fall comb honey, No. 1, $3.00 per case; No. 2, $2.75; No. 3, $2.50 per case of 24 section, six cases to carrier. H. G. Quirin, Bellevue, Ohio

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FOR SALE — Water-white alfalfa, white clover, amber alfalfa, and amber fall honey in 60-lb. cans or smaller packages. Amber fall honey is of our own extracting, and can also be furnished in barrels. Write for sample of kind desired and state quantity you can use. Dadant & Sons, Hamilton, Ill.

## HONEY LABELS

YOUR PROBLEM of a low priced, yet neat and attractive Honey Label is solved. Catalog and Samples FREE. Liberty Pub. Co. Sta. D., Box 4H, Cleveland, O.

## SITUATIONS.

WANTED—A position in large apiary for 1916, or might buy a large apiary North or South, but South preferred. Wm. H. Brown, Spring Hill, Ala.

WANTED—(by young man) a position for 1916 in an apiary. Have had five years experience with a small apiary. Also taking a course in apiculture. Age 19 years. Chas. B. Saunders, Merom, Ind.

## FOR SALE

FOR SALE — Friction-top pails, 5-lb. size, per 100, $4.50; 500, $21.25; 10-lb. size per 100, $6.25; 500, $30. Low prices on other sizes in bulk. Also furnished in re-shipping cases. Shipped from Chicago. A. G. Woodman Co., Grand Rapids, Mich.

## SUPPLIES.

FOR SALE—Second-hand bee equipments cheap. For particulars write me. John Speckman. Rt. 1, Havana, Ill.

FIVE 8-fr. hives, $5.85; 10-fr., $6.50. Hoffman frames, $2.75 per 100. A full line at $1.25; one 2-lb., $2 25, queen extra. For ten or more, write for price. Also nuclei and full wholesale prices, shipped direct from factory in Iowa. Make out list of what you need and let us quote you special prices. The Stover Apiaries, Mayhew, Miss.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog. A. E. Burdick, Sunnyside. Wash.

## MISCELLANEOUS

HOUNDS—Bear, wolf, deer, cat, fox, rabbit and bloodhounds. 50 page illustrated catalog 5c stamp. Rockwood Kennels, Lexington, Ky.

A LITTLE ad in our classified columns will sell that perfectly good equipment that you no longer need. Only 15 cents per line each insertion.

WILL exchange a good 4x5 folding camera and very complete finishing outfit worth $15, for 10 gals. of extracted clover honey. Clarence Langley, Fennville, Mich.

FOR SALE—Use cuts in advertising your queens, honey or bees. We are prepared to furnish cuts for use in beekeepers' advertising at low rates. Let us quote prices on what you need. American Bee Journal, Hamilton, Ill.

FOR TRADE—I have 160 acres of patented land in N. Mex. on R. F. D., ½ mile from good school, near the thriving town of Texico that I want to trade for bees in a radius of 50 miles of Pearsall, Tex. If interested, write me what you have, and for further particulars. W. C. Swinney, Bluff, Tex.

FOR SALE—Why not locate your apiary in Calif.? We will supply the bees, fixtures and locations in the finest honey-producing districts, and sell one or more apiaries on easy terms of payment. Write us. Spencer Apiaries Co., Ventura, Calif.

BACK NUMBERS of the American Bee Journal wanted. We have several calls for back numbers of the Bee Journal, and are offering any assistance possible to readers who wish to secure back numbers to complete their sets. While full years are wanted in most cases, we occasionally have a call for a single number. If you have back numbers of the Journal which you will sell, write us with full information as to the dates of all copies on hand. Some copies wanted at once are as follows: Vol. 35, No. 51; Vol. 28, No. 48; Vol. 30, No. 14; Vol. 40, Nos. 1, 2, and 21; Vol. 41, No. 33; Vol. 42, Nos. 1, 2, 36 and 52; Vol. 43, No. 46. American Bee Journal, Hamilton, Illinois.

## POULTRY

IF YOU breed fancy poultry, offer your surplus stock or eggs for sale in our classified columns.

3470 COCKERELS.— Forty-one varieties of chickens, geese and ducks. Address, Aye Bros., Box 1, Blair, Neb.

COCKERELS, S. C. R. I. Red, true to color vigorous and of excellent type; $2.00 and up Wm. Langley, Fennville, Mich.

## HONEY AND BEESWAX

CHICAGO, Dec. 18.—Trade in honey at the present time is quiet. Retailers having loaded up for the holiday season, there will not be much of a call before the middle of the coming month. Prices are without material change, ranging at 15@16c per pound for the two highest grades, 12@13c per pound for the ambers. Light weight sections are preferred when well attached to the wood. White extracted ranges from 7@9c per pound, according to kind and condition, but very little of it is selling at over 8c per pound in a small way. Large lots can be bought at lower prices. Amber grades range at from 5@6c per pound, with some high flavored and desirable lots at 7c per pound. Beeswax 28@30c per pound. R. A. BURNETT & CO.

CINCINNATI, Dec. 7.—The demand for honey is slacking up somewhat, which is natural around the holidays. We are selling No. 1 white comb honey from $3.65 to $4.00 per case. Lower grades are not wanted in this market at any price. White extracted honey is selling from 7@10c a pound, according to the quantity and quality purchased. Amber honey from 5@6½c a pound. For choice bright yellow beeswax we are paying 28c a pound. THE FRED W. MUTH CO.

NEW YORK, Dec. 18.—There is very little demand at present for either comb or extracted honey, and prices are ruling about the same as in our former report, with plenty of supply coming in of all kinds. HILDRETH & SEGELKEN.

INDIANAPOLIS, Dec. 18. — This market is well supplied with honey, especially comb honey, although we look for quite a demand in the next 30 days, as the jobbers and wholesalers will have very little on hand at that time. With the approach of holidays the market usually shows a lack of vitality. No. 1 choice white comb is selling at $3 75 to $4.00 per case; No. 2 white comb, $3.50 per case. Extracted honey is bringing 9@11c. We are offering 28c cash or 30c in trade for good average wax delivered here. W. S. POUDER

DENVER, Dec. 10.—The new crop of comb honey is selling locally at the following prices: Fancy, $3.60 per case of 24 sections; No. 1, $3.38, and No. 2, $3.15. Local prices on extracted honey unchanged, namely white, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c, demand light. We pay 25c per pound in cash and 27c per pound in trade for clean yellow beeswax delivered to us here. THE COLO. HONEY-PRODUCERS' ASS'N. Frank Rauchfuss, *Mgr.*

LOS ANGELES, Dec. 10.—The market quotations on California honey are as follows: White extracted honey 6c per pound; light amber, 4c. Beeswax, 25c. Fancy white comb honey, $2.75 per case—all f. o. b. Coast. HAMILTON & MENDERSON.

KANSAS CITY Mo., Dec. 14 —The supply of both comb and extracted honey is good and the demand only fair. We think the mild weather has something to do with the light demand. We quote as follows: No. 1 white comb honey, 24 section cases, $3 15 to $3.25; No. 2, $2.75 to $3.00; No. 1 amber comb honey, $3.00 to $3.10; No. 2, $2.50 to $3.00. White extracted, per pound, 7½@8c; amber, 5½@7c. No. 1 beeswax, 28c; No 2, 25c per pound. C. C. CLEMONS PRODUCE COMPANY.

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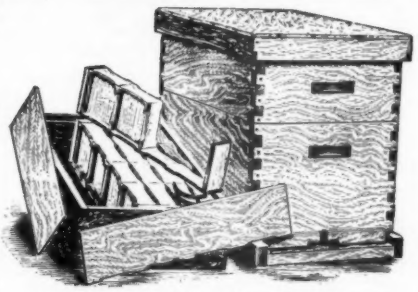

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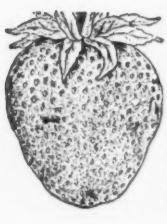

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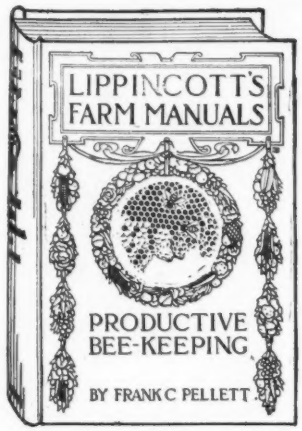


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